BMW Annual Report 1996

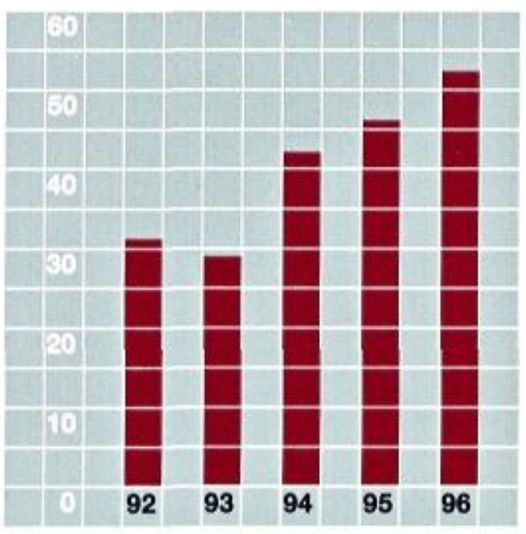
BMW AG

BMW Year to Year Comparison

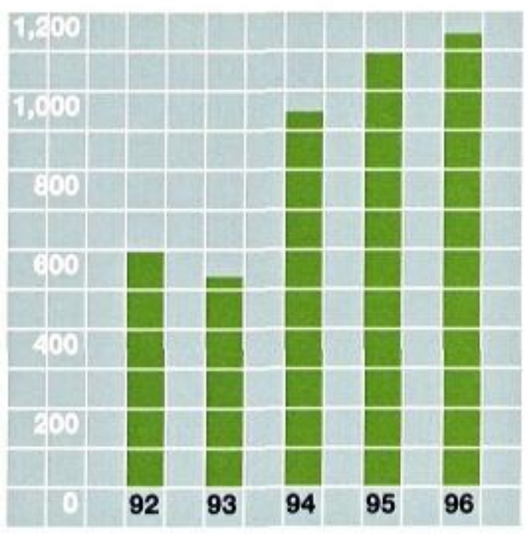
In case of differences of opinion,
the German text shall prevail.

BMW Group		1996	1995	Change in %
Sales	DM million	52,265	46,144	+ 13.3
Automobile production				
Group	units	1,143,558	1,098,582	+ 4.1
BMW	units	639,433	595,056	+ 7.5
Rover Group	units	504,125	503,526	+ 0.1
Automobile deliveries to customers				
Group	units	1,151,361	1,073,161	+ 7.3
BMW	units	644,107	590,072	+ 9.2
Rover Group	units	507,254	483,089	+ 5.0
Motorcycle production [1]	units	48,950	52,653	– 7.0
Motorcycle deliveries to customers	units	50,465	50,246	+ 0.4
Workforce at end of year		116,112	115,763	+ 0.3
Investment	DM million	3,830	3,477	+ 10.2
Depreciation	DM million	3,002	2,877	+ 4.3
Cash flow	DM million	4,092	3,755	+ 9.0
Net income	DM million	820	692	+ 18.5
BMW AG				
Dividends	DM million	297 [2]	267	+ 11.2
per ordinary share of DM50 nominal value	DM	15.00 [2]	13.50	
per preference share of DM50 nominal value	DM	16.00 [2]	14.50	

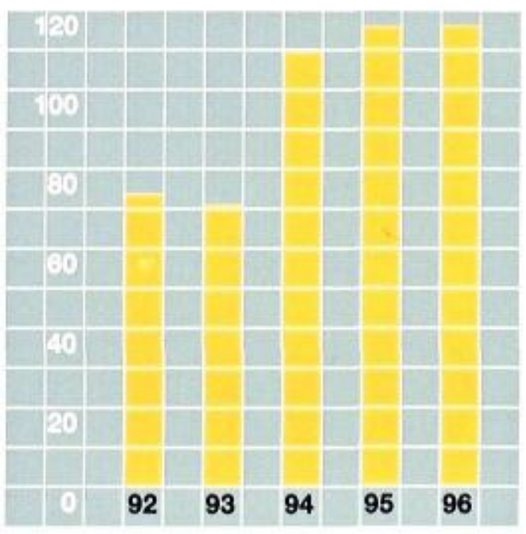
[1] Incl. F 650 assembly at Aprilia S.p.A.
[2] Proposal of the Management



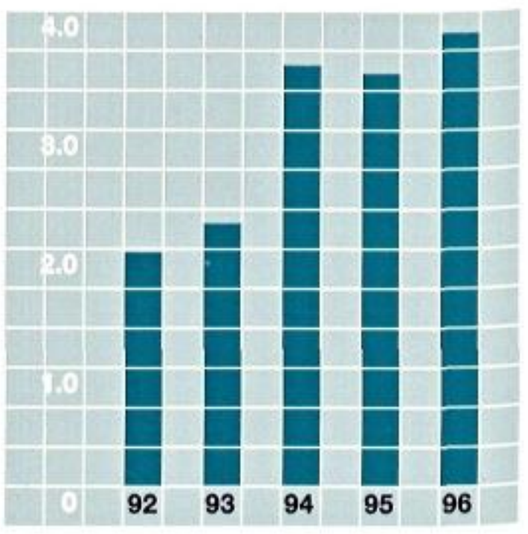
Sales
in DM billion



Automobile Production
in thousands



Workforce
in thousands



Investment
in DM billion

Bayerische Motoren Werke
Aktiengesellschaft, Munich

Annual Report 1996

BMW AG

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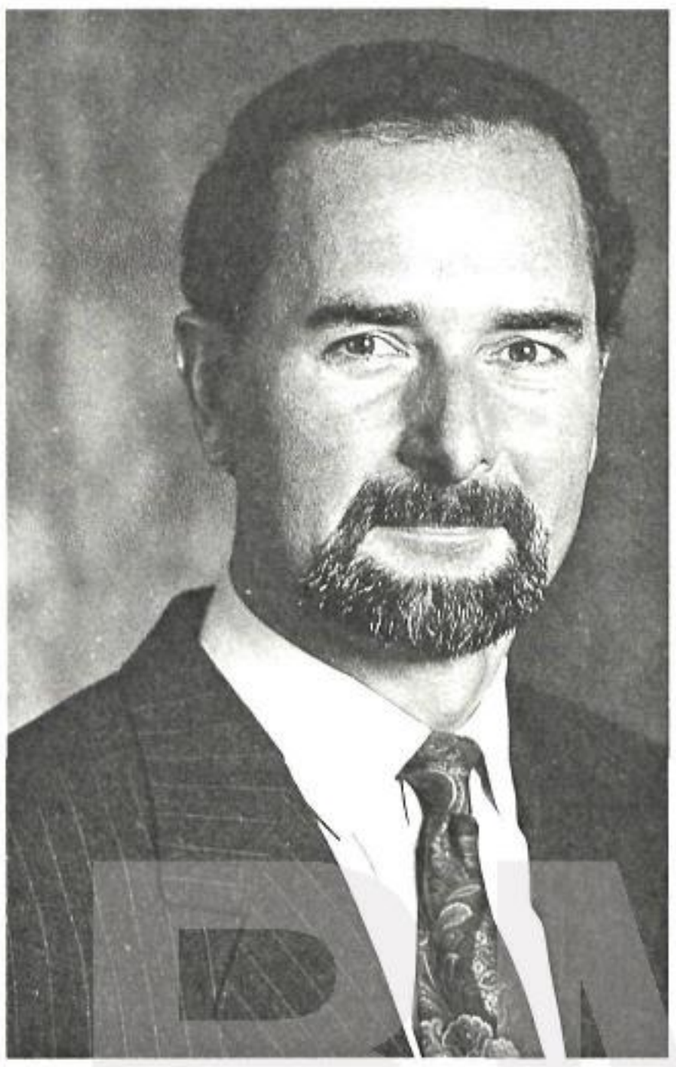


Continuing a long series of successful business years for BMW, 1996 was significant in several ways.

First of all, in terms of the Company's key statistics, it was one of the best business years ever. Never before was demand for BMW cars and motorcycles so strong. Production and sales, in units and value, achieved all-time highs.

The foundations for today's success were laid by programmes initiated in the past; programmes involving high investment and expenditure.

With our products, we have succeeded, consistently and worldwide, in gaining a leading position in the luxury performance segment. Each new model has been more successful than the preceding generation.

Our worldwide sales organisation, developed and expanded progressively over many years, created the conditions for the products' market success.

Substantial investments have been made not only in developing, but also in constantly renewing state-of-the-art production facilities. These are essential if we are to meet our customers' quality demands and achieve our aim of providing modern, productive jobs.

Even in these conditions, qualified and dedicated employees are, ultimately, decisive for our success. Time and again, we have attracted new, highly motivated employees, thus ensuring a steady influx of knowledge.

Today, we are harvesting what we have sown in the past. At the same time, we are sowing the seeds for tomorrow's harvest. This applies to the entire Group, and particularly to the car business at BMW and Rover, and the aero engine business at BMW Rolls-Royce.

BMW Group's car business is in the midst of a new model policy. From 1997, we shall launch at least two completely new products each and every year. However, true to our practice hitherto, we shall not present these models to the public until production is about to start up.

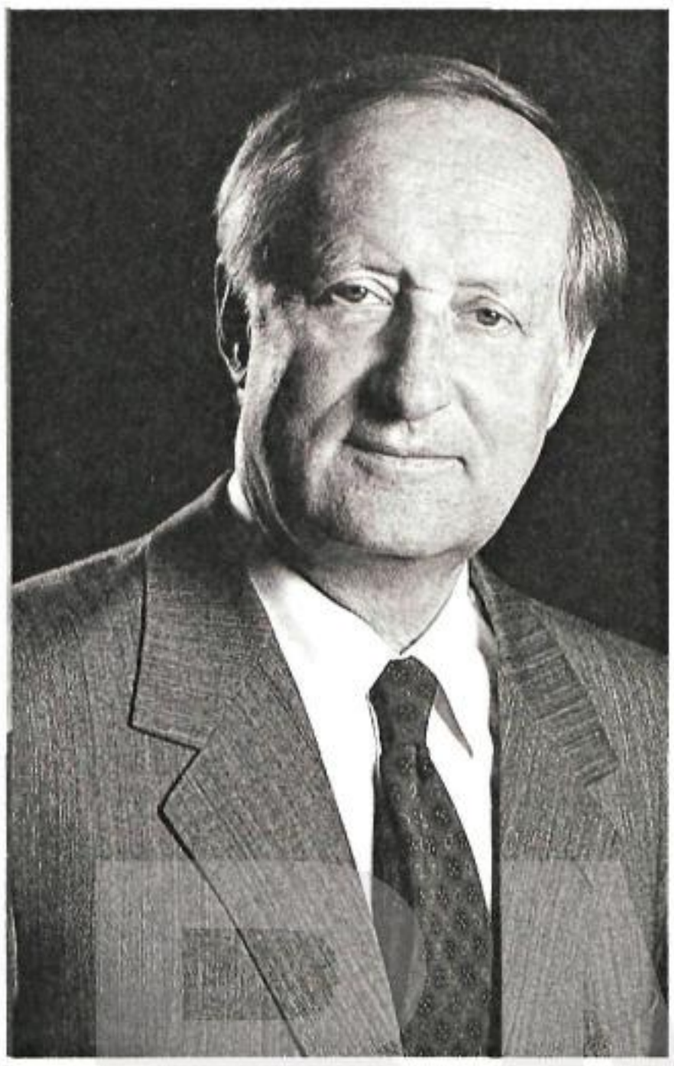
At Rover our programme, lasting several years, includes not only the actual range of products, but also the development of a worldwide sales organisation and the further modernisation of production facilities.

Our policy of consistent and targeted expenditure is particularly striking in the aero engine business at BMW Rolls-Royce. With the beginning of delivery of the first aero engines to customers, we shall increasingly reap the benefits of the preparations we have made for many years.

Despite the immense expenditure on our Company's future, 1996 continued a long series of particularly successful years, confirming BMW's corporate policy: our investments in products, production and employees are investments in the Company's future – to the advantage of our shareholders, customers and workforce.

Bernd Pischetsrieder

Report of the Supervisory Board



The Supervisory Board regularly reviewed the Company's business throughout the financial year. At joint meetings and on the basis of the Board of Management's written and verbal reports, the Supervisory Board studied closely the Company's situation, the course of business and the intended business policy, and discussed these matters with the Board of Management. In addition to the regular meetings, the Supervisory Board was informed about the main business transactions in discussions with the Chairman of the Board of Management.

The Supervisory Board and the Board of Management have carried out measures to strengthen the Company's earning power.

As a Company of the highest technical standards, BMW constantly enhances and innovates its products. Therefore, in 1996, important investments were discussed and the necessary decisions made.

The long-term development of all fields of business was discussed in detail.

The new 5 Series BMW was introduced successfully. The new Spartanburg plant for the manufacture of cars of BMW quality has reached its scheduled capacity. This new plant has anchored BMW in the American business community and has had a positive effect on the Company's image in the United States.

Joint discussions focused on important investment decisions, such as the development and production of 4-cylinder petrol engines. The engines for BMW and Rover cars are to be manufactured in a new engine plant in England. In South America, a plant will be constructed in cooperation with Chrysler for the production of a new series of engines for future small Rover cars.

The BR710 aero engine received its licenses, on schedule, in Europe and the United States; an important milestone in the aero engine business. It is the first German aero engine for civilian aircraft to be licensed worldwide.

The Supervisory Board was also interested in the growing importance of financial services and the motorcycle business.

The Annual Financial Statements for the 1996 Financial Year, the Books of Account and the Economic Review have been examined by KPMG Deutsche Treuhand-Gesellschaft Aktiengesellschaft Wirtschaftsprüfungsgesellschaft, Munich, which has provided its unrestricted confirmatory audit certificate. The Supervisory Board agrees to the result of this audit.

At its meeting on March 20th 1997, the Supervisory Board examined and approved the Annual Financial Statements and the Economic Review, prepared by the Board of Management. The Annual Financial Statements are thereby adopted. The proposal of the Board of Management for the allocation of profits has been examined by the Supervisory Board which supports the proposal.

According to the final result of the Supervisory Board's review, there are no objections to be raised.

The Consolidated Financial Statements and the Economic Review of the BMW Group included in the Economic Review, which have been provided with the unrestricted confirmatory audit certificate of KPMG Deutsche Treuhand-Gesellschaft Aktiengesellschaft Wirtschaftsprüfungsgesellschaft, Munich, as well as the report of the auditor of the Consolidated Financial Statements, have been duly submitted to the Supervisory Board.

In its meeting on July 4th 1996, the Supervisory Board appointed Dr. Helmut Panke to the Board of Management and, from September 1st 1996, as Industrial Relations Director. After 27 years at BMW, Mr. Helmut Niederhofer retired from the Company on August 31st 1996. The Supervisory Board expressed its thanks to Mr. Niederhofer for his services to the Company.

Mr. Werner Schreiber retired from the Supervisory Board on September 30th 1996. The Supervisory Board thanked Mr. Schreiber for his services on the Supervisory Board. Dr. Karin Benz-Overhage, Executive Member of the Board of Management of IG Metall, was appointed Member of the Supervisory Board by decision of the Munich Local Court on January 24th 1997.

Munich, March 20th 1997

The Supervisory Board
Eberhard v. Kuenheim
Chairman

Supervisory Board

Dr.-Ing. E.h. Dr.-Ing. E.h.
Eberhard v. Kuenheim
Munich, Chairman
Former Chairman of the Board
of Management of BMW AG

Manfred Schoch*
Munich, Deputy Chairman
Chairman of the Works Council

Hans Graf von der Goltz
Bad Homburg v.d.H., Deputy Chairman
Businessman

Johann Vilsmeier*
Dingolfing, Deputy Chairman
Chairman of the Works Council
Dingolfing plant

Johanna Quandt
Bad Homburg v.d.H., Deputy Chairwoman

Reinhold Bauer*
Landshut
Deputy Chairman of the Works Council
Landshut plant

Helmuth Baumgärtner*
Dingolfing
Member of the Works Council
Dingolfing plant

Dr. Karin Benz-Overhage*
Frankfurt/Main
Executive Member of the Board of
Management of IG Metall
(from January 24th 1997)

Klaus Bernhardt*
Frankfurt/Main
Trade union secretary

Hans Glas*
Munich
Director 7 and 5 Series

Gerhard Gutsmiedl*
Munich
Deputy Chairman of the Works Council
Munich plant

Arthur L. Kelly
Chicago, Illinois
Managing Partner of
KEL Enterprises Ltd.

Prof. Dr.-Ing. E.h. Berthold Leibinger
Ditzingen
Managing Partner of
TRUMPF GmbH + Co.
Maschinenfabrik Stuttgart

Dr. h.c. André Leysen
Mortsel, Belgium
Chairman of the Supervisory
Board of Gevaert N.V.

Rudolf Lukes*
Munich
Trade union secretary

Prof. Dr. Dr. h.c. Hubert Markl
Munich
President of Max-Planck-Gesellschaft zur
Förderung der Wissenschaften e.V.

Hans-Günther Niklas*
Regensburg
Chairman of the Works Council
Regensburg plant

Dr. Wolfgang Röller
Frankfurt/Main
Chairman of the Supervisory Board of
Dresdner Bank AG

Werner Schreiber*
Frankfurt/Main
Former Executive Member of the Board of
Management of IG Metall
(until September 30th 1996)

Dr.-Ing. Dieter Soltmann
Munich
Member of the Managing Board of
Gabriel Sedlmayr
Spaten-Franziskaner-Bräu KGaA

Lodewijk C. van Wachem
The Hague, Netherlands
Chairman of the Supervisory Board of
Royal Dutch Petroleum Company/Shell

* *employees' representative*

Board of Management

Bernd Pischetsrieder
Chairman

Volker Doppelfeld

Dr. Walter Hasselkus

Prof. Dr.-Ing. Dr. h.c.
Joachim Milberg

Helmut Niederhofer
(until August 31st 1996)

Dr. Helmut Panke
(from July 4th 1996)

Dr.-Ing. Wolfgang Reitzle

Dr. h.c. Horst Teltschik

Executive Director:

Dr. Hagen Lüderitz

General Counsel:

Dr. Dieter Löchelt

BMW AG

Economic Review. **BMW Group is pursuing a long-term business policy which extends way beyond model and economic cycles. In 1996, this policy was particularly successful. BMW was in the midst of the broadest model policy and largest investment programme in its history. The cash flow continued to finance investments in tangible fixed assets. Detailed segment information provides an insight into the earning position of the individual fields of business. In the face of international competition, the Group's success continued to be due to its employees and marques.**

BMW AG

Economic Review of the BMW Group and of BMW AG

1996 was a good year for the BMW Group. On the one hand, the broadest model policy and the largest investment programme in the Company's history were continued unremittingly. On the other hand, the product and capacity measures of recent years provided the basis for successful business. With marques that are rich in tradition, an international corporate structure and total deliveries of 1.15 million cars, the BMW Group is prepared for a new dimension in global competition.

BMW Group develops dynamically

In 1996, deliveries of new BMW cars to customers increased by 54,000 to 644,100 units and thus achieved a new high. The BMW motorcycle business set a new record. With 507,300 units, deliveries of Rover Group vehicles had not been as high since 1988.

The Company's dynamic character and innovative strength were shown by the new 5 Series BMW and the Z3 roadster. Demand for both models by far exceeded their original targets. With deliveries of more than 50,000 7 Series cars to customers, the large saloons continued to be successful worldwide.

The new plant in the United States increased the Company's potential for producing high-quality, individual cars at competitive costs. With this plant, BMW also became part of the North American car industry. In addition to its successful position in this large market, the Company will benefit, in the long term, from cooperation with US suppliers.

At Rover Group, projects to prepare new models and improve the sales organisation in numerous foreign markets advanced rapidly. The new generations of Rover 200 and 400 cars and the MGF sports car stimulated sales as expected.

Rover Group plants are being prepared, on schedule, to meet the challenges ahead. The company's new Design and Engineering Centre opened at the end of 1996. This was a major step towards close cooperation between BMW and Rover.

The shape of the future Group is also reflected in the decisions to build new engine plants in Great Britain and Latin America.

This also applies to the development of business with aero engines at BMW Rolls-Royce GmbH. The company achieved an important milestone when the BR710 aero engine received its international licenses in the summer of 1996.

Even during a period of great change, the Group's income and financial position continues to be sound. Earning power was strengthened.

Car production and sales achieve new highs

In 1996, the plants of the BMW Group manufactured some 1.14 million BMW, Rover, MG, Mini and Land Rover vehicles; 4% more than in the previous year. Fifty percent of the vehicles were produced and 78% of them delivered to customers outside Germany.

BMW car production rose steadily with the start-up of the new 5 Series at the Dingolfing plant and as a result of the capacities at the new US plant. It increased by 7% to 639,400 units and thus, for the first time, exceeded the 600,000-mark.

Rover Group manufactured 504,100 vehicles; the same level as in the previous year. With the model change-over in the Rover 200 Series, the company had to cope with the production start-up of a large-volume model.

As many as 1.15 million new BMW and Rover Group vehicles were delivered to customers; 7% more than in the previous year. The most important sales markets for BMW Group products were again Germany, Great Britain and the United States. The Company is also represented by its own production plants in these countries. The BMW plant in South Africa is gradually being integrated into the Group's international system of linked production plants.

At the end of 1996, the Group's international sales organisation comprised 35 sales companies, around 180 importers and more than 6,000 dealer businesses for cars and motorcycles.

In Germany, BMW products were sold through some 850 independent dealers and 18 sales outlets. At the end of 1996, some 270 German dealers belonged to the Rover Group sales organisation.

Group sales rise to DM52 billion

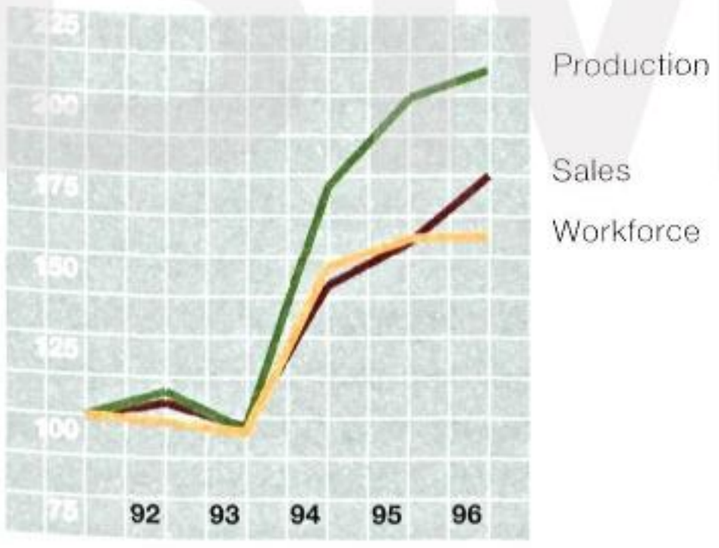
In 1996, the sales of the BMW Group rose by 13% to DM52.3 billion. Thus, they were twice as high as at the end of the 1980s. In 1996, sales grew far more strongly than vehicle production and sales. This was due to the marked shift in demand to more expensive models and the revaluation of major trading currencies against the D-mark.

When excluding Rover Group, BMW Group sales rose by 12% to DM37.3 billion. Rover Group sales, excluding intercompany sales, rose by 15% to around DM15 billion.

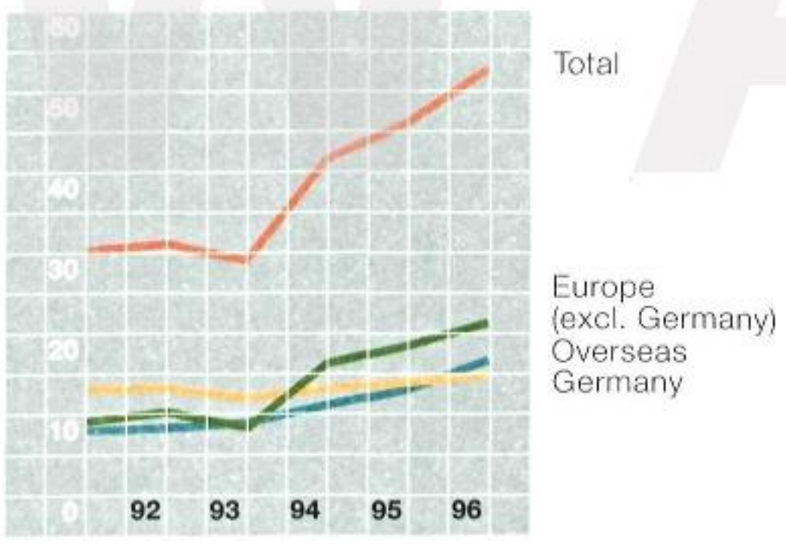
With 68%, the Group generated by far the largest part of its sales in Europe. On the one hand, North America and, on the other hand, the markets of the Asian-Pacific region, Latin America and Africa each accounted for half the business volume overseas.

When taking account of the increase in product inventories and own work capitalised amounting to DM0.7 billion, the Group's total value of production was DM53.0 billion, 12% higher than in the previous year.

Material costs amounted to DM31.1 billion, compared with DM27.4 billion in the previous year. Their share of the total value of production rose by 0.7 percentage points to 58.6%. In the BMW Group, wages, salaries, pension plans and social security



Sales, Automobile Production and Workforce of the BMW Group
Index: 1991 = 100



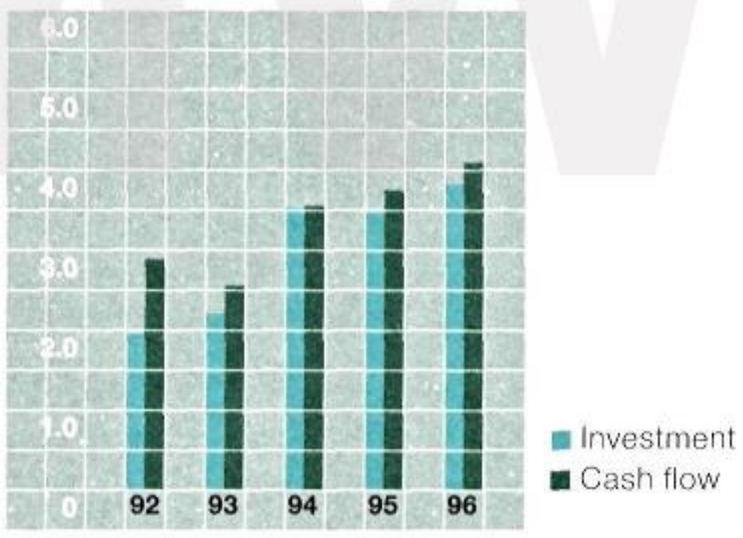
Sales of the BMW Group According to Regions
in DM billion

contributions cost DM9.8 billion, 11% more than in the previous year. With 18.6%, the share of personnel costs decreased slightly compared with the previous year.

Depreciation on intangible and tangible fixed assets increased by 4% to DM3.0 billion. The rise in depreciation is due to the renewed marked increase in the level of investment.

In view of the Group's numerous product projects and continuing high expenditure on development in the aero engine business, the earning power of the BMW Group developed satisfactorily.

The result from ordinary business activities in the BMW Group rose by 21% to DM1,660 million. After deduction of taxes on income and other taxes, net income improved by 18.5% to DM820 million.



Investment and Cash Flow of the BMW Group
in DM billion

The return on shareholders' equity after tax increased by 0.6 percentage points to 9.0% although shareholders' equity rose by more than 10% to DM 9.1 billion.

Results improved in all fields of business

The result from ordinary business activities in the BMW Automobiles segment increased by 9% to DM2,389 million and thus greatly determined the development of the group result. This segment includes business with motorcycles which, with DM19 million, again made a positive contribution to the group result. In the Rover Group Automobiles segment, the previous year's loss of DM335 million was reduced by DM56 million to DM279 million.

In the Aero Engines business, expenditure on development continued to be high. However, the previous year's loss was reduced by DM25 million to DM627 million.

Financial Services achieved a positive result of DM26 million, taking full account of depreciation, using the declining balance method, in the entire Group.

Key data on the income and assets of the segments of the BMW Group are shown in tables on pages 22 and 23.

Higher dividend proposed

The Board of Management and the Supervisory Board propose to the Annual General Meeting that BMW AG's unappropriated profit available for distribution, amounting to DM297 million, be used to pay a dividend of DM15 per ordinary share and DM16 per preference share with a nominal value of DM50 each on the share capital with dividend entitlement (DM920.5 million in ordinary shares and DM66.4 million in preference shares).

Thus, the Company's shareholders continue to take part in the generally satisfactory development of the BMW Group. With this proposal, the Board of Management and the Supervisory Board would like to express their thanks to the shareholders for their confidence in the Company's development.

Purchasing becomes increasingly international

In 1996, the BMW Group purchased goods and services worth DM31.9 billion. This expenditure was mainly on production materials and capital goods. Despite several contrary trends, prices for purchases of materials in Germany were generally stable.

World market prices in US dollars decreased by 9% for industrial raw materials, but increased by 8% for energy. Moderate wage settlements in most industrial countries and increasing efficiency in the supply industry helped to check the growth of the cost of materials. In contrast, increases in the value of the US dollar and other major trading currencies against the D-mark had a negative effect on costs.

In 1996, Germany accounted for around 50%, Great Britain for 30% and other international sources for around 20% of the volume of purchases. Favourable cost structures and the innovative strength of suppliers with worldwide operations contributed decisively to the increasingly international character of BMW Group's purchasing activities. When selecting new suppliers, special attention was paid to their flexibility and reliability.

Joint purchasing activities and the selection of the same suppliers for BMW and Rover resulted in cost savings of more than DM100 million in 1996. The use of standard technologies and components in future BMW and Rover vehicles also has great savings potential. In 1996, cooperation focused on work on product projects of this kind.

With the new plant in the United States, the planned engine plant in Latin America and the development of capacities in South Africa, the BMW Group is opening up new opportunities for cooperation with the supply industry in these regions.

New jobs in production, increased international cooperation

At the end of 1996, the BMW Group employed 116,112 people worldwide; around 350 more than in the previous year. While the workforce in the BMW car business increased by 857 to 70,510, it decreased at Rover Group by 730 to 39,407.

Additional employees were required mainly for the production of the new 5 Series BMW at the Dingolfing plant and the Z3 roadster in the United States. New employees were also recruited to assemble aero engines at the Dahlewitz plant of BMW Rolls-Royce GmbH and to strengthen financial services.

At the Rover Group factories, the number of associates declined as productivity rose. Personnel capacity was adjusted to new development and production structures during the course of natural fluctuation.

In the medium term, the Group's international character and extensive investment programmes helped to safeguard and increase employment at the Group's individual plants. Within three years, more than 3,000 new jobs were created by BMW in Germany, around 5,000 associates were recruited by Rover Group in Great Britain and almost 1,900 associates were hired at the new US plant in South Carolina.

The Company's worldwide development, and particularly the acquisition of Rover Group, has greatly changed the size and structure of the workforce. At the end of 1996, around 45% of the Group's employees worked outside Germany, compared with only 14% at the end of 1993. The Company's increasingly international character made new demands on cross-frontier and cross-cultural cooperation between specialists and executive personnel within the Group. By improving the guiding principles for executive personnel, binding criteria were created for cooperation throughout the Group.

For many BMW and Rover employees, 1996 brought a change of workplace. For example, around 1,000 employees at the Munich and Regensburg plants moved to the Dingolfing production plant, thus proving their mobility.

At Rover Group, the design and engineering resources which used to be at different sites were brought together in the new Design and Engineering Centre at Gaydon. The introduction of new structures in the entire BMW Group will demand great flexibility on the part of employees.

Increased level of investment

In 1996, BMW Group's investments in fixed assets increased by 10% to DM3.8 billion. This rise reflects primarily the Company's preparations for new models and the development of production facilities in the coming years. In 1996, group investments were again financed from funds generated by the Group. The cash flow amounted to DM4.1 billion.

Investments in the BMW car plants in Germany continued to be made according to plan. Again, around DM2 billion were invested in the German plants. At Rover Group, investments of DM1.2 billion remained at the previous year's high level.

While investments in the Spartanburg plant decreased after production start-up, they increased at the BMW engine plant at Steyr. At BMW Rolls-Royce, investments in intangible and tangible assets increased to DM0.3 billion.

In 1996, the Company and its sales partners invested heavily in the individual image of the Group's marques, compared with its international competitors, and in the quality of services.

International network of research and development

BMW Group has a worldwide system of linked development facilities. The BMW Research and Engineering Centre in Munich with more than 5,000 employees, Rover Group's Design and Engineering Centre at Gaydon and the Diesel Development Centre at Steyr form the nucleus of this system. In California, BMW has its own design studio, Designworks/USA. In the BMW Group, some 12,000 engineers and specialists work on the development of new products and production processes.

In 1996, project- and process-oriented working methods and highly developed, linked information and communications systems further reduced development times and non-recurrent expenditure. The quality of development and planning processes is expected to improve with the increased use of computer simulation techniques.

New engine plants in Latin America and Great Britain

In Latin America, BMW and Chrysler Corp. will jointly build a plant for 1.4- to 1.6-litre, 4-cylinder engines. After investments of 500 million US dollars, up to 400,000 engines will be produced there at the beginning of the next decade.

BMW and Chrysler will each hold a 50% stake in the joint venture. The two companies will also have an equal share of the plant's production capacities. The new engines are based on a Chrysler design which will be enhanced on a joint basis.

Through cooperation with Chrysler, the BMW Group will be able to meet, at particularly favourable costs, the engine demand expected for the new Mini. The joint engine plant will also improve opportunities for opening up the entire Latin American market for the sale of group products and for increased cooperation with the local supply industry.

The second engine plant is being built at Hams Hall, near Birmingham, in Great Britain. This plant will manufacture the new BMW 1.6- to 2.0-litre, 4-cylinder engines which, with corresponding specifications, will be used in both BMW and Rover cars. Investment of DM1 billion is scheduled for this plant.

With the construction of the new engine plants and the introduction of new engines, the BMW Group will restructure engine production in the BMW Group. Thus, operations will become more efficient and production capacities will increase.

Development in the first quarter of 1997

Sales continued to develop satisfactorily at the beginning of 1997. Deliveries of new BMW cars to customers in the first three months will be markedly higher than the previous year's comparable figure.

Deliveries of Rover Group vehicles in the first quarter of 1997 will continue at the level of the previous year's comparable period. On March 7th 1997, the company's new Design and Engineering Centre was opened officially at Gaydon.

Outlook

In 1997, demand for cars in the industrial countries will continue to be influenced by replacement requirements. In Europe, with real incomes barely rising and no tax incentives to buy new cars, growth rates will be low. The car markets of North America and Japan are expected to stagnate.

After strong growth in 1996, the trend in BMW car sales should stabilise at a high level. The new 5 Series BMW is now fully available; its touring version and the high-performance Z3 2.8 and M roadsters will be delivered to customers from the spring of 1997.

Rover Group will continue to strengthen its position in the world car market with new models and the quantitative and qualitative development of its sales organisation.

At the same time, the development and investment programme required for the Group's product and market policy will advance according to plan. From 1997, at least two completely new BMW Group products will be launched each year.

With a sound financial basis, the BMW Group will make the most of its opportunities to continue to increase its productivity and strengthen its earning power.

BMW test track at Miramas in the south of France: the Group's cars and motorcycles can be tested on a 6km motorway ring all year round. The grounds, covering an area of almost 500ha, also have special handling tracks for the test engineers. Miramas has complemented the BMW test grounds at Aschheim near Munich since 1986.

BMW AG

In 1996, the BMW Group continued to be in a good financial position. Balance sheet structures remained sound and the cash flow exceeded investments. Earning power improved in all segments. Net income increased by 18.5% to DM820 million. In 1996, the BMW share price rose by more than 40%; far more strongly than the DAX (German share index). BMW proposes a higher dividend to its shareholders.

Strong balance sheet growth due to exchange influences

In 1996, the total assets of BMW Group rose by 11.0% to DM45.3 billion; DM4.5 billion more than in the previous year. This increase includes DM1.8 billion which resulted from the translation of foreign currency accounts at different exchange rates on the transaction date from the previous year. Financial services again accounted for a large share of the growth with DM1.8 billion. Thus, the financial services' share of the Group's balance sheet total increased by 0.3 percentage points to 37.0%.

The industrial core business is usually financed with a higher proportion of own funds than financial services. Therefore, the balance sheet of the BMW Group is divided into core business and financial services within the framework of legal requirements. The balance sheet structures of the two fields of business are explained separately.

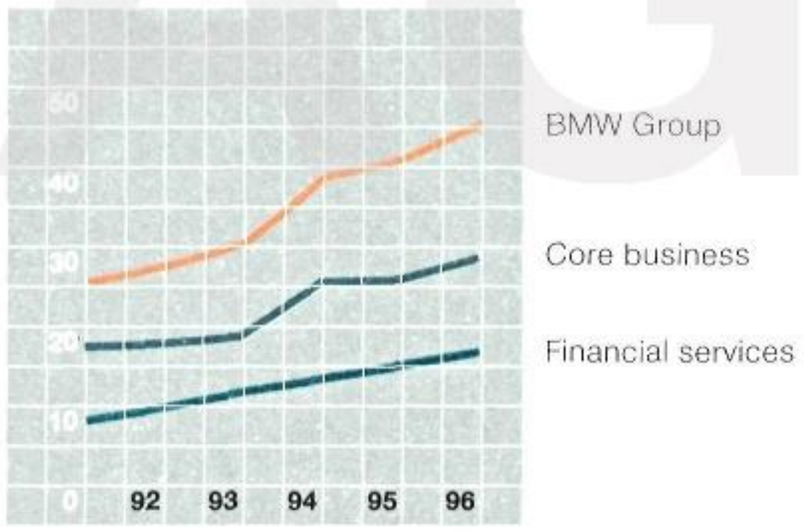
The total assets of the core business rose by 10.5% to DM28.5 billion.

Investment in intangible and tangible fixed assets, amounting to DM3,830 million, contrasted with depreciation of DM3,002 million. Fixed assets increased by DM666 million or 6% compared with the previous year as a result of the translation of foreign currency accounts.

Investment amounted to 7.3% of sales, with 78.4% covered by depreciation. Again, cash flow completely financed investment.

Inventories rose by 3.0% and thus far less strongly than the balance sheet total.

In contrast, receivables increased more strongly than the balance sheet total.



Total Assets
in DM billion

Trade receivables increased by 26.1% as a result of the growth of sales in the last few months of 1996 when the availability of new models improved. Other receivables increased mainly as a result of financing subsidiaries which are not included in the consolidated financial statements.

Liquid funds of DM4.0 billion were DM0.3 billion lower than the previous year as a result of reduced financial liabilities. Net financial assets, ie, liquid funds less financial liabilities, increased by DM496 million to DM655 million.

With 25.0%, the ratio of own funds of the core business is at the same level as the previous year, despite the increase in total assets of DM2.7 billion. Own funds cover 53.2% of fixed assets. Own funds, provisions and accruals cover 134.1% of fixed assets.

Provisions and accruals rose by 13.2%; more strongly than total assets.

Financial liabilities were 19.5% lower than the previous year as a result of repayment.

In contrast, other liabilities rose by 29.0%; more strongly than the balance sheet total. This was due to exchange influences and higher liabilities from leased fixed assets.

Financial services include the assets and liabilities from sales financing in the consolidated balance sheet.

The total assets of financial services increased by 11.9% to DM16.8 billion. Leased products increased by 14.6% and receivables from sales financing by 9.0%, compared with the previous year. Leased products accounted for 53.1% (previous year: 51.9%) of the total assets of financial services.

Leased products were valued at group manufacturing costs. Additions amounted to DM7,183 million (previous year: DM5,964 million). Depreciation amounted to DM3,973 million (previous year: DM3,371 million). Used car book values decreased by DM2,387 million (previous year: DM1,299 million) as a result of the

Balance Sheet Structure Core Business	31. 12. 1996 DM million	%	31. 12. 1995 DM million	%	Change DM million
Fixed assets	13,429	47.1	11,905	46.1	+1,524
Inventories	5,340	18.7	5,183	20.0	+ 157
Receivables	5,742	20.1	4,397	17.0	+1,345
Liquid funds	4,033	14.1	4,354	16.9	– 321
Balance sheet total	**28,544**	**100.0**	**25,839**	**100.0**	**+2,705**
Own funds	7,140	25.0	6,491	25.1	+ 649
Provisions and accruals	10,872	38.1	9,608	37.2	+1,264
Financial liabilities	3,378	11.8	4,195	16.2	– 817
Other liabilities	7,154	25.1	5,545	21.5	+1,609

Balance Sheet Structure Financial Services					
Leased products	8,921	53.1	7,782	51.9	+1,139
Receivables from sales financing	7,877	46.9	7,226	48.1	+ 651
Balance sheet total	**16,798**	**100.0**	**15,008**	**100.0**	**+1,790**
Own funds	1,927	11.5	1,709	11.4	+ 218
Liabilities from sales financing	14,871	88.5	13,299	88.6	+1,572

Statement of Sources and Application of Funds DM million	1996	1995
Net income	820	692
Depreciation of intangible and tangible fixed assets	3,002	2,979
Increase in pension fund provisions	270	84
Cash flow	4,092	3,755
Depreciation of leased products	3,973	3,371
Change in other provisions and accruals	627	– 123
Income from the sale of fixed assets	–	20
Retained income of associated companies	– 51	– 33
Changes in current assets and liabilities		
Change in inventories	197	– 456
Increase in receivables	– 736	– 461
Increase in liabilities	1,422	2,088
Cash flow from operating activities	**9,524**	**8,161**
Investment in tangible fixed assets	– 3,830	– 3,477
Investment in financial assets	– 74	– 99
Investment in leased products (less disposals)	– 4,796	– 4,665
Increase in receivables from sales financing	– 388	– 1,010
Other	143	23
Application of funds for investment activities	**– 8,945**	**– 9,228**
Issue of new shares	23	21
Payment of dividends for the previous year	– 267	– 277
Increase in bonds	601	1,165
Change in financial liabilities	– 23	532
Reduction of commercial papers	– 819	– 573
Other	5	– 14
Decrease/Increase of funds from financing activities	**– 480**	**854**
Influence of exchange rates and other changes in value on liquid funds	– 420	248
Change in liquid funds	**– 321**	**35**
Liquid funds on January 1st	4,354	4,319
Liquid funds on December 31st	**4,033**	**4,354**
of which: marketable securities and notes	1,335	1,474
liquid funds	2,698	2,880

sale of the cars concerned. Exchange influences from the translation of foreign currency accounts increased the amount generated by leased products by DM316 million (previous year: DM197 million).

Own funds in the financial services were increased by DM218 million. At 11.5%, the ratio of own funds to total assets is as high as in the previous year.

Cash flow rose again

The cash flow increased by DM337 million to DM4,092 million and thus exceeded investments in tangible fixed assets. In addition, the cash flow from operating activities covered the application of funds for all the Group's investment activities, including investment in financial services.

Segment report

In the segment report, the activities of the BMW Group are defined according to fields of business and regions. The activities of the BMW Group have been arranged in BMW Automobiles, Rover Group Automobiles, Aero Engines and Financial Services.

BMW Automobiles and Rover Group Automobiles account for the majority of BMW Group's activities. These fields of business develop, manufacture, assemble and sell cars, including off-road vehicles, spare parts and accessories.

BMW products are sold in Germany by the sales outlets of BMW AG and legally independent authorised dealers. Rover Group products are sold in Great Britain, their home market, solely by legally independent authorised dealers. Local subsidiaries are responsible for sales in the most important markets.

The BMW car segment also includes the development, manufacture, assembly and sale of motorcycles, including spare parts and accessories. The BMW motorcycle business accounts for 2.5% (previous year: 2.8%) of this segment's sales.

In the aero engine segment, BMW Rolls-Royce develops, manufactures, assembles and sells worldwide aero engines.

The financial services segment concentrates on the leasing of cars and loan financing for customers and dealers. The financial result of this segment includes interest expense from the financing of the leasing business.

Software, electronics and electrical engineering activities appear under Miscellaneous, consolidated companies, together with activities covering several segments in the BMW Group. These concern, in particular, group financing and BMW Group investments.

In the consolidated companies, receivables and liabilities, provisions and accruals, income and expenses, and results are eliminated between the segments. The assets of the various fields of business include assets which have contributed towards the achievement of the segment's result.

The segment information by region shows external sales according to the regions in which the products are sold.

The segment information is based on the same methods of accounting and presentation as the BMW consolidated financial statements.

Segment information by business	External sales		Intersegment sales		Total sales	
DM million	1996	1995	1996	1995	1996	1995
BMW Automobiles [1]	31,004	27,996	5,818	4,407	36,822	32,403
Rover Group Automobiles	14,936	12,960	267	–	15,203	12,960
Aero Engines	205	106	12	6	217	112
Financial Services	5,954	4,865	358	313	6,312	5,178
Miscellaneous, consolidated companies	166	217	– 6,455	– 4,726	– 6,289	– 4,509
BMW Group	**52,265**	**46,144**	**–**	**–**	**52,265**	**46,144**

Segment information by business	Segment income (loss)		Financial income (loss)		Result from ordinary business activities	
DM million	1996	1995	1996	1995	1996	1995
BMW Automobiles [1]	2,336	2,091	53	94	2,389	2,185
Rover Group Automobiles	– 67	– 146	– 212	– 189	– 279	– 335
Aero Engines	– 587	– 611	– 40	– 41	– 627	– 652
Financial Services	527	425	– 501 [2]	– 527 [2]	26	– 102
Miscellaneous, consolidated companies	49	174	102	97	151	271
BMW Group	**2,258**	**1,933**	**– 598**	**– 566**	**1,660**	**1,367**

[1] Including BMW motorcycles
[2] Interest expense from the financing of the leasing business

BMW AG

Segment information by business

DM million	Assets 1996	Assets 1995	Capital expenditure 1996	Capital expenditure 1995	Depreciation and amortisation 1996	Depreciation and amortisation 1995
BMW Automobiles [1]	20,402	18,756	2,273	2,031	1,957	1,937
Rover Group Automobiles	9,219	7,478	1,238	1,195	875	829
Aero Engines	836	545	293	155	119	87
Financial Services	17,624	15,282	18	63	35	8
Miscellaneous, consolidated companies	– 2,739	– 1,214	8	33	16	16
BMW Group	**45,342**	**40,847**	**3,830**	**3,477**	**3,002**	**2,877**

Segment information by region

DM million	External sales 1996	External sales 1995	Assets 1996	Assets 1995	Capital expenditure 1996	Capital expenditure 1995
Germany	14,621	13,862	19,796	18,420	2,058	1,928
Great Britain	8,930	8,242	10,975	8,409	1,246	1,201
Rest of Europe	12,218	10,088	5,840	5,997	215	70
North America	8,228	6,177	6,203	5,348	229	223
Asia	5,574	5,291	2,444	2,449	18	10
Miscellaneous, consolidated companies	2,694	2,484	84	224	64	45
BMW Group	**52,265**	**46,144**	**45,342**	**40,847**	**3,830**	**3,477**

[1] Including BMW motorcycles

BMW AG

Continuing low interest rates on international financial markets

In 1996, the central banks of the leading industrial countries continued to pursue an expansive monetary policy. As a result, the yields of long-term investments decreased again on most capital markets.

Since the key lending rates remained stable or were reduced in Europe, the United States and Japan, short-term interest rates were also low.

Movement on the foreign exchange markets

During 1996, the value of major trading currencies increased considerably against the D-mark.

The US dollar began the year at DM1.43 and achieved a high of DM1.56 in December. In 1996, the US dollar averaged DM1.50; 5% higher than in the previous year. In contrast, at an average of DM1.38, the Japanese yen was 10% below the previous year's average.

After the previous year's losses in value, major European currencies strengthened again. This applied, in particular, to the pound sterling which firmed up against the D-mark to more than DM2.60 at year end. The Italian lire also became increasingly stable. At the end of November 1996, it returned to the European monetary system at an average rate of 990 lire to the D-mark.

In all, the foreign exchange value of the D-mark decreased by 3% against the currencies of Germany's most important trading partners. This offset the real revaluation of the D-mark in the previous year.

International group financing

In order to finance its activities, the BMW Group uses increasingly the opportunities offered by the international money and capital markets. There BMW AG, in particular, and group financing companies in Belgium, Great Britain, the Netherlands and the United States raise funds and pass them on to the operating companies as required.

In 1996, BMW issued three public bonds with a total volume of around DM600 million to meet long-term capital requirements. BMW US Capital Corp. issued bonds amounting to DM200 million for around four years and bonds amounting to 200 million US dollars for more than three years. BMW Australia Ltd. raised 100 million Australian dollars with five-year bonds. The type of bond issue depends on interest and currency conditions in the markets.

BMW AG increased the Euro Medium Term Note Programme, issued in 1994, from 1 billion US dollars to 3 billion US dollars. At the end of the year, about half of this financing programme was used.

BMW AG has a commercial paper programme of DM1.5 billion and, after an increase of 1 billion US dollars in 1996, BMW US Capital Corp. has one of 3.5 billion US dollars to meet short-term financial requirements.

In recent years, outside funds have been used mainly to refinance the strong expansion of financial services.

Currency and interest management
Derivative financial instruments are used to hedge foreign exchange and interest risks. At BMW, they hedge only flows of payments in the operating business.

Currency risks occur mainly when exporting cars and when purchasing materials which have to be paid in foreign currencies, while interest risks occur primarily when refinancing the lending and leasing business.

In order to hedge currency risks, the Group concluded foreign currency forward contracts and options, and used cross currency swaps. At the end of the year, hedging of this kind was mainly for payments in US dollars, Japanese yen, pound sterling, Italian lire and French francs.

Interest risks are limited by interest swaps and forward rate agreements, and by caps and floors which limit the interest fluctuations for BMW to a defined range. These instruments are tailored to meet respective needs in terms of currency, amount and maturity.

Monitoring and risk limitation
BMW pursues a policy of strict separation of trade, handling and monitoring procedures in all transactions with derivatives. Organisation and work sequences are regulated by detailed guidelines. Systems and procedures are constantly checked and improved.

In order to minimise risks, business is concluded only with first-class banks. In addition, individual maximum limits are set for business with these banks. BMW is also guided by the assessments of leading rating agencies.

Yearly Average Exchange Rates of Major Trading Currencies against the D-mark
Index: 1990 = 100

In the long term, BMW aims to largely balance flows of payments in foreign currencies within the Group. With the development of production and purchasing activities in the United States, the Company will become increasingly independent of fluctuations in the US dollar. In Europe, the introduction of a single European currency, scheduled for 1999, is expected to put an end to the distortions of competition caused by exchange rates.

Above-average gains for the BMW share

In 1996, the international share markets were influenced by dynamic price movements. In December 1996, the Dow Jones Index of the 30 most important industrial shares in the United States achieved a historic high of 6561 points.

Against this background, the DAX (German share index) also reached a record 2910 points. The favourable economic environment with low interest rates, a weaker D-mark and improved economic prospects contributed to this development. At the end of the year, the DAX closed at 2889 points; 28% higher than in the previous year.

The price of the BMW ordinary share rose strongly during the year. After opening at DM742, it peaked at DM1,078 in December. Thus, it greatly exceeded its previous high of DM927 in May 1994 following the acquisition of Rover Group. The BMW ordinary share ended the year at a price of DM1,062; 44% higher than the previous year. Thus, the price of the BMW ordinary share increased far more strongly than the German share index.

The price of the BMW preference share also rose markedly, ending the year at DM742, compared with DM519 at the beginning of 1996. BMW preference shares were introduced in 1989 to encourage

BMW Shares	1992	1993	1994	1995	1996
Ordinary share					
Number of shares in thousands	16,875	16,875	18,409	18,409	18,409
Stock exchange quotation in DM[1]					
Year end	469	689	767	740	1,062
High	594	690	927	835	1,078
Low	432	433	643	670	742
Preference share					
Number of shares in thousands	1,103	1,156	1,293	1,328	1,366
Stock exchange quotation in DM[1]					
Year end	349	498	558	519	742
High	449	498	671	600	751
Low	324	324	464	485	519
Key data per share in DM[2][3]					
Dividend					
Ordinary share	12.50	12.50	12.50 1.50[4]	13.50	15.00[5]
Preference share	13.50	13.50	13.50 1.50[4]	14.50	16.00[5]
Tax credit for shareholders resident in Germany					
Ordinary share	7.03	5.36	6.00	5.79	6.43
Preference share	7.59	5.79	6.43	6.21	6.86
Net income	40.45	28.66	35.44	35.12	41.62
Cash flow	160	143	181	191	208
Shareholders' equity[6]	362	378	389	403	445

[1] Cash quotations on the Frankfurt Stock Exchange
[2] Without values adjusted retroactively due to the capital increase in 1994 in a ratio of 11:1
[3] Weighting of shares according to entitlement to dividend in year of issue
[4] Bonus
[5] Proposal of the Management
[6] Excluding unappropriated profit available for distribution

savings among the employees of BMW AG and its wholly-owned subsidiaries in Germany.

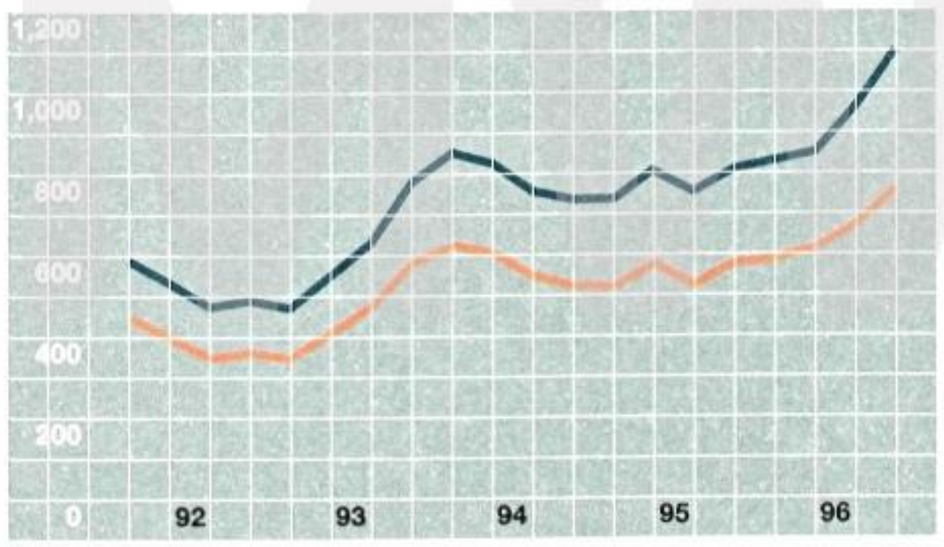
The BMW share has been an attractive investment in recent years. Investors in BMW shares have had an average yearly yield of around 12% for ten years. In the last five years, the annual yield has been more than 20%. German government bonds yielded only 5.8% and 8.1% respectively in the same periods.

The proposed dividend of DM15.00 per BMW ordinary and DM16.00 per BMW preference share for 1996 increases to DM21.43 and to DM22.86 respectively, when including the full tax credit of 3/7 for shareholders resident in Germany. Total dividend payments for 1996 amount to DM297 million, compared with DM267 million in the previous year.

New preference shares for BMW employees

In 1996, BMW employees again had an opportunity to acquire their Company's preference shares. Some 38,000 new BMW preference shares were issued to employees in order to encourage employees' savings.

As a result, more than DM23 million flowed into the Company. The subscribed capital of BMW AG increased by DM1.9 million to DM988.7 million. The Company now has approved capital of DM9.7 million for issuing new preference shares.



Performance of the BMW share
Quarterly average in DM

Companies of the BMW Group

The companies shown here, representing the Group's different fields of business, are predominantly wholly-owned BMW companies.

Automobiles and Motorcycles

BMW AG
Munich

Development

Research and Engineering Centre
Munich
Diesel Development Centre
Steyr, Austria
BMW M GmbH, Gesellschaft für individuelle Automobile
Munich
BMW Technik GmbH
Munich
Charles W. Pelly Designworks, Inc.
Newbury Park, CA, USA

Production

Munich plant
Dingolfing plant
Regensburg plant
Wackersdorf plant
Landshut plant
Berlin plant
Eisenach plant

Spartanburg plant, USA
Rosslyn plant, South Africa
Steyr plant, Austria
Toluca plant, Mexico

Sales

BMW Austria Ges.m.b.H.
Salzburg
BMW Belgium S.A./N.V.
Bornem
BMW France S.A.
Bois d'Arcy
BMW (GB) Ltd.
Bracknell
BMW Ibérica S.A.
Madrid
BMW Italia S.p.A.
Palazzolo di Sona (Verona)
BMW Nederland B.V.
The Hague
BMW Norge AS
Oslo
BMW (Schweiz) AG
Dielsdorf
Oy BMW Suomi AB
Helsinki
BMW Sverige AB
Stockholm

Sales

BMW Asia Pte. Ltd.
Singapore
BMW Australia Ltd.
Melbourne
BMW de Latinoamérica S.A.
Buenos Aires
BMW do Brasil Ltda.
São Paulo
BMW Canada Inc.
Whitby
BMW Japan Corp.
Tokyo
BMW Korea Co., Ltd.
Seoul
BMW de México S.A. de C.V.
Mexico City
BMW New Zealand Ltd.
Auckland
BMW of North America, Inc.
Wilmington, DE
BMW (South Africa) (Pty.) Ltd.
Pretoria

Automobiles
Rover Group Ltd.
Warwick

Development and Production
Development and Test Centre
Gaydon

Longbridge plant
Solihull plant
Cowley plant
Swindon plant

Sales
Rover Belgium N.V.
Wolowe
Rover Deutschland GmbH
Neuss
Rover España S.A.
Madrid
Rover France S.A.
Argenteuil
Rover Ireland Ltd.
Dublin
Rover Italia S.p.A.
Rome
Rover Nederland B.V.
Vianen
Rover Portugal Veiculos e Pecas Lda.
Lisbon

Rover Australia Pty. Ltd.
Parramatta
Land Rover do Brasil Ltda.
São Paulo
Rover Japan Ltd.
Tokyo
Land Rover (South Africa) (Pty.) Ltd.
Johannesburg
Land Rover North America, Inc.
Dover, DE

Aeronautical Engineering
BMW Rolls-Royce GmbH
Oberursel

Financial Services
Financial service companies
in 15 countries

Other Subsidiaries
Bavaria Wirtschaftsagentur GmbH
Munich
BETEK Bau- und
Energietechnik GmbH
Munich
Kontron Elektronik GmbH
Eching
softlab GmbH
für Systementwicklung und EDV-
Anwendung
Munich

Group Financing
BMW Coordination Center N.V.
Bornem
BMW Finance N.V.
The Hague
BMW Österreich Finanzierungs GmbH
Steyr
BMW Overseas Enterprises N.V.
Willemstad, Curaçao
BMW (UK) Capital plc.
Bracknell
BMW US Capital Corp.
Wilmington, DE

January
The BMW Z3 roadster was introduced to the public at the Detroit Motor Show.

BMW presented an Art Car, painted by David Hockney, at the Royal Academy of Arts in London.

February
COMPANION, the warning system developed by BMW, began to be tested on the A92 near Munich.

In Japan, the open-top, two-seater MGF sports car was voted "Import Car of the Year 1996".

March
At Wackersdorf, excavation work began for a BMW industrial park for the supply industry.

April
A company agreement on the introduction of banking systems for working hours came into force at the German BMW plants.

The 725tds was the first 7 Series BMW to be equipped with a diesel engine.

Rover Group received the prestigious Queen's Award for Technology for its Modular Engine Management System, MEMS.

May
BMW Group's Euro Medium Term Note Programme was increased by 2 billion US dollars to 3 billion US dollars.

A new importer was appointed for the sale of BMW and Land Rover vehicles in Bolivia.

June
The new Rover 200 was introduced to the German market where it soon became the Rover model in greatest demand.

Sixty years ago, on June 14th 1936, a prototype of the BMW 328 roadster won the "Eifelrennen", its first race, on the Nürburgring.

July
Plastics production at the Landshut plant was certified in accordance with quality standards QS 9000 and ISO 9000-1.

August
The Spartanburg plant began to manufacture only the Z3 roadster and achieved its daily production target of 250 units.

The BMW Rolls-Royce BR710 aero engine received its first license from the European Joint Aviation Authority.

September
A parts logistics centre was opened in Singapore for the twenty BMW markets in Southeast Asia.

In Germany, 875 young people began their vocational training at BMW; 50 more than in the previous year.

October
BMW and Chrysler signed a memorandum of understanding on the construction of an engine plant in Latin America.

BMW presented a new sporting tourer, the K 1200 RS.

The first of the 23 Land Rover Centres, currently planned for Australia, was opened in Southport, Queensland.

The first associates moved into Rover Group's new Design and Engineering Centre at Gaydon.

November
The construction of a BMW Group engine plant at Hams Hall, near Birmingham, was announced.

December
The Mini became available with comprehensive technical improvements.

On December 23rd, the 200,000th new 5 Series BMW came off the assembly lines at the Dingolfing plant.

The BMW ordinary share peaked at DM1,078; a new high. It gained 44% during the year.

Economic and Political Environment.

The world economy began to gather momentum again in 1996. The relaxation of monetary policy and fewer distortions of competition caused by exchange rates stimulated economic activity in the western industrial countries. The threshold countries of Asia and Latin America continued to expand with high increase rates. In all, the world economy grew by 2.5%. Car production increased by only 2%.

BMW AG

World car production increases slightly

In 1996, replacement requirements determined demand in the traditional car markets. Worldwide production increased by around 3% to 37.3 million cars. Thus, the previous year's generally weak trend continued.

While in Western Europe production again rose by 4% to 13.8 million cars, it fell in the United States by 4% to 7.4 million cars. In Japan, after declining in the previous years, car production increased by 3% to 7.9 million units.

The Latin American car industry has gathered momentum, with production rising by 12% to more than 2.5 million units. Mexico's car production grew again after the previous year's setback and Brazil's increased to a record 1.5 million units.

High growth rates were also achieved in Southeast Asia. Car production in South Korea was 12% higher than in the previous year. Within ten years, production there has trebled to 2.2 million cars, with exports rising by as much as 21% to 1.1 million units. In India, the 19% increase in production to 460,000 units reflects growing domestic demand for cars.

Car production capacities were developed mainly outside the US, European and Japanese markets. In South America and Southeast Asia, production grew by two-figure rates. New car plants are being built in Central and Eastern Europe. Since the new capacities are also intended for export production, the range of cars on the traditional markets will continue to increase.

North America: further growth

After successful consolidation of the economy, the United States developed dynamically again in 1996. The US economy grew by 2.5%, while inflation was a low 2.1%. Thus, the boom continued for the sixth successive year.

The programmes to cut government spending and high economic growth reduced the budget deficits. With a share of 1.6% of the gross domestic product, new public-sector debt was lower than in most other industrial countries.

In contrast, the US foreign trade deficit continued to grow. This shows, in particular, the economic gap between the United States and its most important trading partners.

While demand for cars stagnated at 8.5 million units in the United States, the off-road, mini-van and pick-up segment expanded by 8% to 6.6 million units. Japanese manufacturers increased their US production to the detriment of imports. As a result, the share of imported cars in the US market has almost halved to 16% since its all-time high in 1987. German marques achieved 20% growth to 368,000 units; a 4% market share.

Production declined by 4% to 6.1 million cars. This was mainly due to decreases at two large US manufacturers. Japanese makes accounted for a share of around 30%.

In Canada, economic growth of 1.5% remained behind that of the United States. However, government debt was checked, thus creating the conditions for sustained economic development. While the total market stagnated, German marques increased by 17%, their market share rising to 5.7%.

Japan and Asia: differing trends

At the beginning of 1996, the government's sixth economic programme of the 1990s brought Japan out of the longest phase of stagnation since the second world war. At first, government demand and construction activity supported by public authorities were largely responsible for the upturn. However, with low interest rates and improved export prospects due to the yen's depreciation, investment activity also recovered during the year. In contrast, private consumption did not grow as rapidly as the overall economy.

The Japanese car market continued to recover. Registrations rose by 5% to 4.7 million units. Imported cars increased by 9% to 390,000 units, achieving a market share of 8.4%. Once again, European manufacturers were particularly successful. In contrast, the share of Japanese marques manufactured abroad decreased. However, they still made up one-fifth of the imported cars.

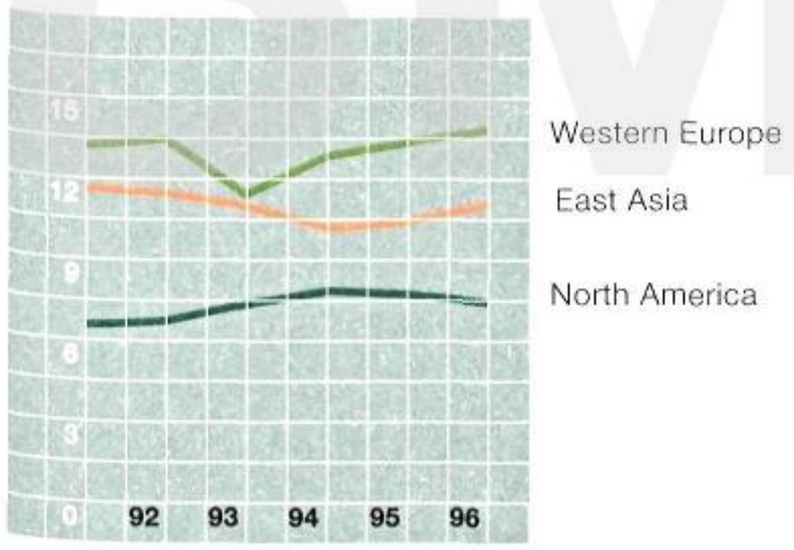
Japan's car exports have decreased by more than one-quarter to 2.9 million units within three years. However, this trend reached its lowest point during the year.

In the Asian threshold countries, growth slackened at a high level. However, sluggish economic development in the industrial countries had comparatively little impact because of the increase in trade between the threshold countries. The car markets in these countries stagnated at a total of 1 milion units.

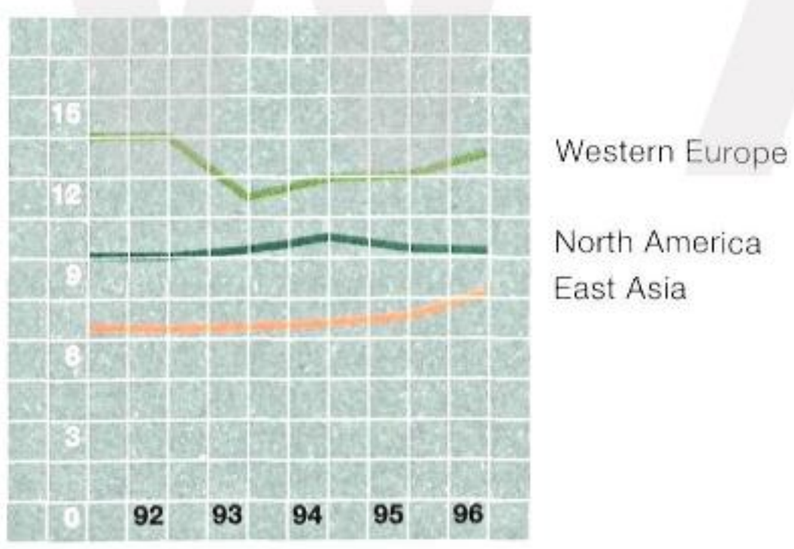
Europe: before monetary union

In 1996, financial, economic and social policy in the EU states of continental Europe was influenced by the consolidation of government budgets. This is essential for most countries if they are to qualify for European economic and monetary union, as planned. The decreasing differences in Europe's interest rates show that the financial markets have already adjusted to the changes involved in economic and monetary union from January 1st 1999.

In the EU, the government deficit share of the gross domestic product fell for the third successive year. Cost-cutting measures to reduce public debt checked economic development, but they also provided the urgently required scope for growth in the medium term.



Automobile Production
in millions



Automobile Registrations
in millions

After economic stagnation in the winter of 1995/96, the economy picked up again in most European countries. It was supported primarily by exports. Investment activity was at a low level. Private demand also developed weakly because of high unemployment and barely rising real incomes.

Car demand rose by 7% to 12.8 million units and thus contrasted unexpectedly strongly with the previous year's stagnation. All countries recorded an upward trend. While growth was above-average in France and Spain, sales increased only slightly in Italy.

Japanese marques again satisfied 11% of demand. Some 600,000 Japanese cars were produced in Europe. Cars from South Korea accounted for a market share of 2%.

The share of diesel-engined cars remained unchanged at around 23%. However, the trend differed greatly in the individual countries.

Germany: modest upturn under way

In 1996, the development of the economy and general conditions in Germany was almost a mirror image of the previous year. Depreciation of the D-mark, lower wage settlements and previous relaxation of monetary policy stimulated economic growth.

Exports played a key role, rising substantially from the end of 1995. First measures to relieve the burden of taxes and charges also stimulated private consumption. However, investments in machinery and equipment failed to take off as was hoped.

Higher expenditure on the social security systems made the share of government spending in the gross domestic product rise to more than 50%; a new high. However, increasing public consensus on easing the burden of the government budget by increasing individual responsibility in the private and public sector, including industry, markedly improved Germany's medium-term growth prospects.

In Germany, registrations of new cars increased by 5% to 3.5 million units. Every third car was imported. Car production rose by 4% to 4.5 million units. The export business was largely responsible for this growth, increasing by 8% to 2.7 million units; the highest level since 1989. The share of exports rose by 2 percentage points to 58%.

Two-thirds of the exported cars went to other countries in the European Union. Exports to Asia decreased by 6% and to Latin America by 67% because of the import restrictions in Brazil.

The number of people employed in the German car industry increased slightly to 662,000, compared with the previous year.

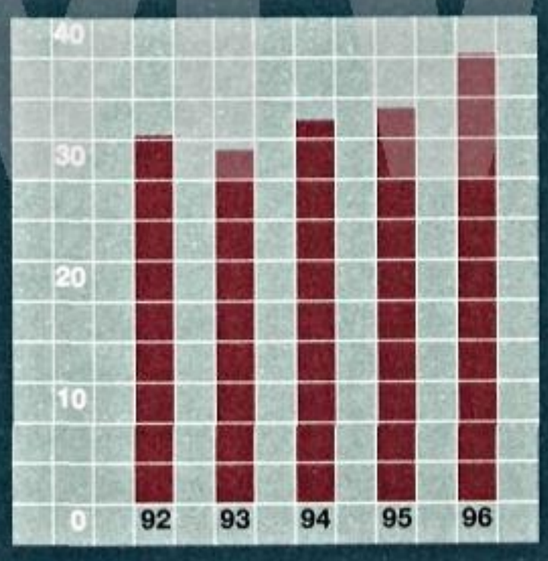
Great Britain: Europe's engine of growth

In Great Britain, economic performance grew by 2.4% and thus more strongly than in most other European countries in 1996. Despite the revaluation of the pound sterling by around 4% against the D-mark on year's average, exports continued to be the mainstay of economic activity. For the first time since the upturn in 1992, decreasing unemployment stimulated private consumption.

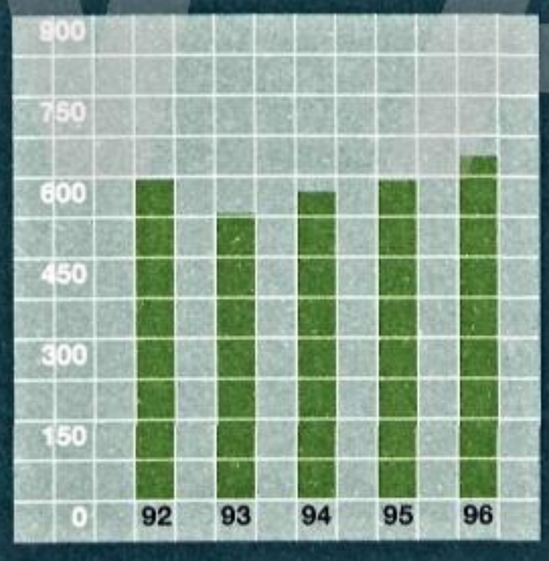
More than two million new cars were registered for the first time since 1990. German, Italian and Japanese marques each achieved two-figure growth rates. Car production rose by 10% to 1.7 million units, around 26% of which were Japanese marques.

BMW Automobiles and Motorcycles. The typical characteristics of BMW cars and motorcycles are innovation, dynamic performance and elegance. With individual products and advanced technology, the marque has strengthened its position compared with its international competitors. Sales and production continued to grow steadily. In 1996, the BMW vehicle business again determined the Group's earning power.

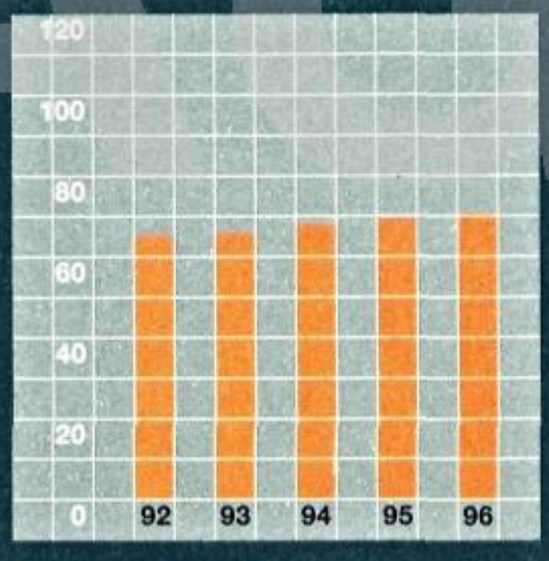
BMW AG



Sales of BMW Automobiles[1)]
in DM billion
[1)] Including motorcycles



Production of BMW Automobiles
in thousands



Employees in the BMW Automobile Business
in thousands

BMW Automobiles	1996	1995
Sales[1] in DM billion	36.8	32.4
Production in thousands	639	595
Employees in thousands	70.5	69.7
Result from ordinary business activities[1] in DM million	2,389	2,185

[1] Including motorcycles

With 644,100 units, deliveries of BMW cars to customers achieved a new record. Demand for the new 5 Series car and the Z3 roadster was higher than expected and thus contributed to the pleasing growth. Record levels were achieved in the United States, Great Britain and Japan. Importers and dealers invested in the quality of services and in new information systems.

Rising demand for BMW cars worldwide

In 1996, deliveries of new BMW cars to customers increased by 9% to a new high of 644,107 units. Although demand remained brisk for 3 and 7 Series cars, the increase in sales was mainly due to the introduction of the new 5 Series BMW and the Z3 roadster. The BMW share of the world car market rose from 1.7% to 1.8%.

With more than 400,000 units, sales of 3 Series cars achieved the previous year's extraordinarily high level. This was mainly due to the choice of 3 Series models, engines and fittings which is so typical of BMW. Not only the roadster and touring version, but also the BMW Convertible developed extremely satisfactorily. With sales of 32,700 units, a very high level was reached for the third successive year.

At the end of the year, 35,500 Z3 roadsters, introduced into the markets from March 1996, had been delivered to customers. Demand was far stronger. In the spring of 1997, a roadster with a 2.8-litre, 6-cylinder engine, the Z3 2.8, will be added to the existing range of roadsters with 4-cylinder engines.

In addition, production preparations were made for an M roadster, a particularly high-performance version with an output of 236kW (321bhp), developed by BMW M GmbH. The M roadster and Z3 2.8 will be equipped with an ASC+T system (Automatic Stability Control + Traction) as standard. This ensures a particularly high degree of active driving safety.

The new generation of 5 Series cars began to be sold in Germany in December 1995 and then gradually became available in the world's markets. Demand exceeded all expectations. Production started up in record time and achieved a particularly high standard of quality.

Compared with the previous year, total deliveries of 5 Series cars to customers increased by more than half to around 190,000 units, 158,000 of which were new models.

With its harmonious combination of sophisticated styling and advanced technology, and innovations, such as the use, for the first time in series-produced cars, of aluminium for suspension and chassis, the new medium-sized BMW is extremely well positioned to cope with international competition. The new 5 Series car is available with 6- and 8-cylinder petrol engines, and BMW's particularly smooth-running 6-cylinder diesel engines.

The touring versions of the outgoing 5 Series BMW continued to be produced until mid-year. During their model cycle, these versions accounted for around 20% of total sales of 5 Series cars. The new 5 Series touring version will be available from the spring of 1997.

Once again, some 51,000 large 7 Series saloons were delivered to customers. The previous year's level was achieved as a result of strong demand worldwide; in Germany, cars in this segment were affected by changes in taxation.

The 6-cylinder 728i with petrol engine and 725tds with diesel engine, and pleasing strong demand in North America, boosted sales. After its introduction into the traditional diesel markets, such as Belgium, France and Italy, the 725tds accounted for 40% to 70% of total 7 Series sales.

In 1996, two-thirds of all 7 Series cars were fitted with an 8-cylinder engine. The 12-cylinder 750i and 750iL models achieved a share of around 10%. More than 40% of customers chose a version with an extended wheelbase.

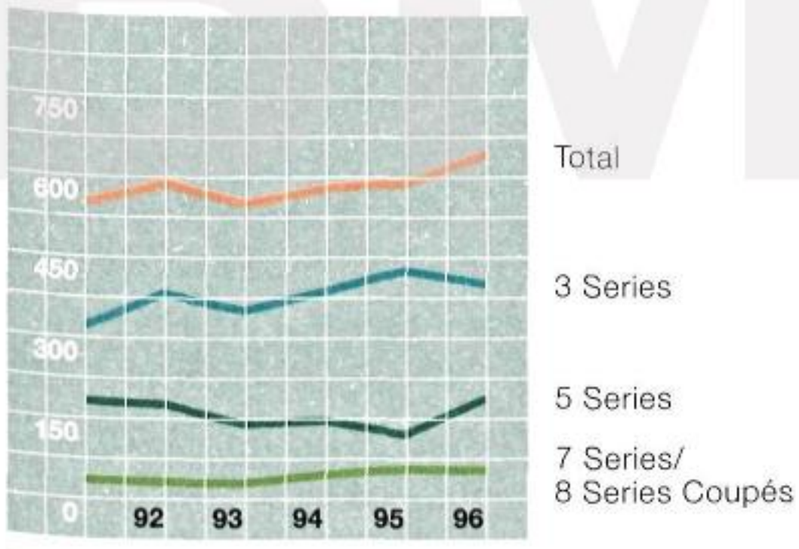
The Coupés of the BMW 8 Series uphold the tradition of the large Gran Turismo cars. Some 1,600 of these cars were delivered to customers in 1996.

140,000 units. The 7 Series saloon remained the car in greatest demand in Europe's top market segment.

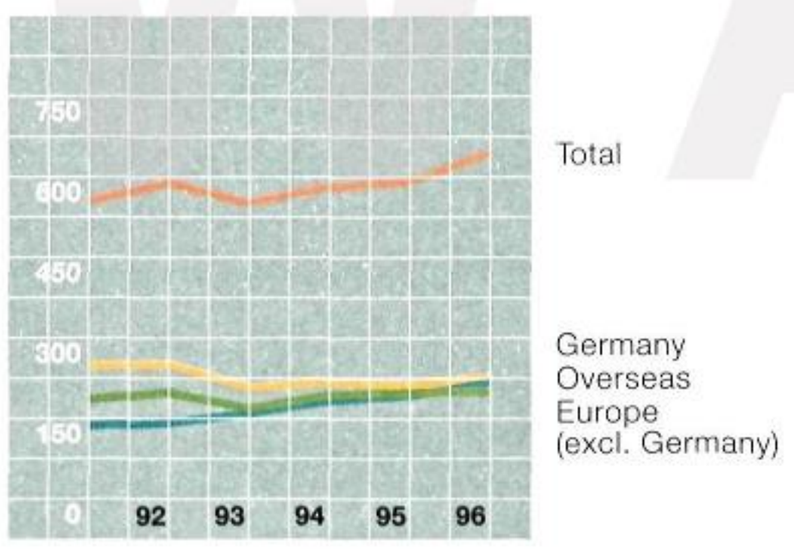
In Germany, BMW registrations increased in the course of the production start-ups by 6% to around 227,500 units.

In Great Britain, the second-largest European sales market for BMW cars, 56,800 units exceeded the previous year's record by 3%. BMW has been the leading marque in Great Britain's top car segment for many years.

In France, contrary to the general market trend, demand was particularly high for the new BMW diesel-engined cars. Every second new BMW car had a diesel engine. Registrations increased by 12% to 28,200 units.



Deliveries of BMW Cars to Customers According to Models
in thousands



Deliveries of BMW Cars to Customers According to Regions
in thousands

Western Europe: upward trend for BMW cars

In Western Europe, 428,500 new BMW cars were registered; 9% more than in the previous year. BMW accounted for a market share of 3.3%. After a hesitant start, sales grew more dynamically as the new 5 Series BMW and the Z3 roadster became available. This development was also observed in numerous overseas markets.

As the new models of the 5 Series were first introduced in Europe, new registrations of the medium-sized BMW increased above average in this market; by 75% to

In Italy, with registrations rising by 20% to 34,900 units, BMW was not affected by generally stagnating demand. It achieved a market share of 2%; a new high. This was largely due to the success of the BMW 5 Series and the 725tds model.

In Spain, the downward trend of previous years was reversed in 1996. Starting from a comparatively low level, registrations of new BMW cars rose by 23% to 12,100 units. In Austria and Switzerland, registrations increased by around 11% each to more than 11,000 units. In Belgium, registrations of new BMW cars rose by 19% to 16,200 units; an all-time high. Thus, for the first time, BMW achieved a market share of more than 4%. Two-figure growth was also recorded in the Netherlands.

After several difficult years, prospects improved markedly for the sales companies in Scandinavia. In Sweden, BMW registrations rose by more than half to 3,900 units and in Norway they increased four-fold. In Finland, more than 1,000 BMW cars were delivered to customers after five years of weak demand. As is already the case in Norway and Sweden, in Finland the Group's marques will be sold by joint group companies from the beginning of 1997.

In the smaller markets of Western Europe where BMW is represented by independent importers, sales rose by 8% to 11,300 units. In Central and Eastern Europe, the development work of the previous years helped to boost sales from 2,100 to 2,600 units, but economic and political conditions remained unsatisfactory.

Record levels in North America, activities increased in Latin America

In 1996, BMW for the first time delivered more than 100,000 cars to customers in the United States. Sales of 105,800 units were 13% higher than in the previous year. Since 1991, when demand was last at its lowest, mainly because of the declining value of the dollar, sales of BMW cars have almost doubled. Since 1993, BMW has been the most successful European marque in its segment. In 1996, the United States was the world's largest sales market for the 7 Series BMW.

In Canada, the upward trend continued for BMW cars, with 9% growth to 5,700 units; a new record.

While the Latin American car market stagnated, BMW sales in this region, including Mexico, increased by 32% to 6,900 units. This success was due primarily to the BMW sales company established in Brazil in 1995, and to the activities of the BMW regional office in Argentina which caters for the needs of importers in the Spanish-speaking countries of Latin America.

In 1996, BMW do Brasil Ltda. was the most successful importer of luxury performance cars in Brazil. Despite unfavourable customs duties, 3,000 BMW cars were sold there through 25 dealers.

In its first full year of business, BMW de México S.A. de C.V. sold 1,130 BMW cars; every second one was a 3 or 5 Series model assembled in Mexico. The sale of Land Rover models began in 1996. The purchase of parts and components in Mexico opens up the market to limited numbers of imported cars.

In May 1996, a new importer was appointed for the sale of BMW and Land Rover vehicles in Bolivia.

Car Markets in Countries with BMW Sales Companies		1996	1995
Europe			
Austria	Total market	307,700	279,600
	BMW	11,200	10,100
Belgium	Total market	397,400	358,900
	BMW	16,200	13,600
Finland	Total market	95,800	79,900
	BMW	1,050	650
France	Total market	2,132,100	1,930,500
	BMW	28,200	25,100
Germany	Total market	3,496,300	3,314,100
	BMW	227,500	214,900
Great Britain	Total market	2,025,500	1,945,400
	BMW	56,800	55,000
Italy	Total market	1,736,000	1,731,700
	BMW	34,900	29,200
Netherlands	Total market	473,500	446,400
	BMW	10,800	9,600
Norway	Total market	125,000	90,500
	BMW	1,580	410
Spain[1)]	Total market	911,100	834,400
	BMW	12,100	9,800
Sweden	Total market	183,800	169,800
	BMW	3,900	2,500
Switzerland	Total market	273,600	268,400
	BMW	11,500	10,400
Overseas			
Australia	Total market	492,100	488,400
	BMW	7,900	7,900
Brazil	Total market	1,514,500	1,488,900
	BMW	3,000	2,800
Canada	Total market	660,700	669,600
	BMW	5,700	5,200
Japan	Total market	4,668,700	4,443,900
	BMW	36,300	34,400
Mexico	Total market	197,700	116,200
	BMW	1,130	260
New Zealand	Total market	64,900	65,700
	BMW	910	960
South Africa	Total market	249,800	236,600
	BMW	16,000	18,000
South Korea	Total market	1,210,500	1,139,100
	BMW	1,450	710
United States	Total market	8,529,000	8,635,400
	BMW	105,800	93,300

[1)] Including Canary Islands

BMW AG

Differing trends in East Asia
Despite far keener competition, BMW strengthened its market position in Japan, with registrations increasing by 5% to 36,300 cars. In South Korea, the second-largest car market in East Asia, BMW Korea Co., Ltd. more than doubled car sales to 1,450 units.

BMW importers in Southeast Asia are supported by BMW Asia Pte. Ltd. in Singapore. In September 1996, the company opened a logistics centre for the efficient distribution of parts and accessories to some twenty BMW markets in Southeast Asia. In 1996, 23,000 new BMW cars were delivered to customers in this region.

While BMW recorded two-figure growth rates in Singapore, Indonesia and Malaysia, political uncertainties curbed sales in Taiwan and Thailand, the region's two largest BMW markets, and in Hong Kong.

In China, BMW is represented by five dealers and 12 sales establishments. Sales opportunities did not meet expectations because of the renewed increase in trade barriers.

Further growth in the Middle East
In 1996, BMW continued to consolidate its market position in the Middle East. Sales rose by one-quarter to 4,000 cars. BMW is represented by importers in 13 countries in this region. They are supported by a regional sales office in Dubai. Investments continued to be made in the dealer and sales organisation.

In October 1996, after investment of DM30 million, the importer in Dubai opened a sales centre which also houses training facilities for the region's sales organisation. New import businesses were opened in Qatar, the Yemen and Jordan. New businesses are being constructed in Syria and Israel. In October 1996, BMW announced the establishment of an assembly plant in Egypt.

Further growth for BMW Australia, reorientation in South Africa
While the total Australian market stagnated, deliveries of 7,900 new BMW cars to customers achieved the previous year's record level. In New Zealand, with more than 900 units, BMW remained the market leader in the luxury performance segment.

Since South Africa's return to the world economy, more suppliers have entered the country's car market. In addition, measures have been introduced to restructure BMW South Africa. As a result, in 1996 registrations of new BMW cars decreased by 11% to 16,000 units. Nevertheless, BMW remained the market leader in South Africa's luxury performance segment.

BMW customer service
Dealers and importers throughout the world invested in buildings, technical equipment, staff training and education. In 1996, these activities focused on the introduction of the new 5 Series BMW.

At the training centres of the BMW sales companies and importers, staff were informed about the technical innovations in the vehicles and measures to enhance customer service.

Sales partners worldwide can turn to the service pool of the BMW customer service for on-the-spot advice. The 50 or so master mechanics in this pool provide assistance with all technical and business matters, organisation and workshop management.

BMW made further progress with its sales logistics and communications systems. Substantial cost savings were achieved through the further integration of Rover Group.

3 Series

316i
1596cc, 75kW (102bhp)
318i
1796cc, 85kW (115bhp)
318tds
1665cc, 66kW (90bhp)
320i
1991cc, 110kW (150bhp)
323i
2494cc, 125kW (170bhp)
325td
2497cc, 85kW (115bhp)
325tds
2497cc, 105kW (143bhp)
328i
2793cc, 142kW (193bhp)
M3
3201cc, 236kW (321bhp)

316i touring
1596cc, 75kW (102bhp)
318i touring
1796cc, 85kW (115bhp)
318tds touring
1665cc, 66kW (90bhp)
320i touring
1991cc, 110kW (150bhp)
323i touring
2494cc, 125kW (170bhp)
325tds touring
2497cc, 105kW (143bhp)
328i touring
2793cc, 142kW (193bhp)

316i compact
1596cc, 75kW (102bhp)
316g compact
1596cc, 64kW (87bhp)
318ti compact
1895cc, 103kW (140bhp)
318tds compact
1665cc, 66kW (90bhp)

316i Coupé
1596cc, 75kW (102bhp)
318is Coupé
1895cc, 103kW (140bhp)
320i Coupé
1991cc, 110kW (150bhp)
323i Coupé
2494cc, 125kW (170bhp)
328i Coupé
2793cc, 142kW (193bhp)
M3 Coupé
3201cc, 236kW (321bhp)

318i Convertible
1796cc, 85kW (115bhp)
320i Convertible
1991cc, 110kW (150bhp)
328i Convertible
2793cc, 142kW (193bhp)
M3 Convertible
3201 ccm³, 236kW (321bhp)

Z3 roadster 1.8
1796cc, 85kW (115bhp)
Z3 roadster 1.9
1895cc, 103kW (140bhp)
Z3 roadster 2.8
2793cc, 141kW (192bhp)
M roadster
3201cc, 236kW (321bhp)

5 Series

520i
1991cc, 110kW (150bhp)
523i
2494cc, 125kW (170bhp)
525tds
2497cc, 105kW (143bhp)
528i
2793cc, 142kW (193bhp)
535i
3498cc, 173kW (235bhp)
540i
4398cc, 210kW (286bhp)

520i touring
1991cc, 110kW (150bhp)
523i touring
2494cc, 125kW (170bhp)
525tds touring
2497cc, 105kW (143bhp)
528i touring
2793cc, 142kW (193bhp)

7 Series

725tds
2497cc, 105kW (143bhp)
728i
2793cc, 142kW (193bhp)
735i
3498cc, 173kW (235bhp)
740i
4398cc, 210kW (286bhp)
750i
5379cc, 240kW (326bhp)

728iL
2793cc, 142kW (193bhp)
735iL
3498cc, 173kW (235bhp)
740iL
4398cc, 210kW (286bhp)
750iL
5379cc, 240kW (326bhp)

8 Series

840Ci
4398cc, 210kW (286bhp)
850Ci
5379cc, 240kW (326bhp)

Motorcycles

F 650, F 650 ST
652cc, 35kW (48bhp)

R 850 R
848cc, 52kW (70bhp)
R 1100 R, R 1100 GS
1085cc, 59kW (80bhp)
R 1100 RS, R 1100 RT
1085cc, 66kW (90bhp)

K 1100 LT
1092cc, 74kW (100bhp)
K 1200 RS
1171cc, 72kW (98bhp) or
1171cc, 96kW (130bhp)

BMW Automobile and Motorcycle Range

Automobiles
(from left to right)
Front row:
BMW 750iL, BMW 740i, BMW 840i
Middle row:
BMW 525 tds, BMW 528i touring, BMW 535i
Back row:
BMW M roadster, BMW 328i Convertible, BMW M3 Coupé, BMW 316i compact, BMW 323i touring, BMW 320i

Motorcycles
(from left to right)
BMW K 1200 RS, BMW R 1100 GS
BMW R 1100 RT, BMW F 650 ST

BMW cars and motorcycles in front of the Château de Chantilly near Paris; in the background, Chantilly race course.

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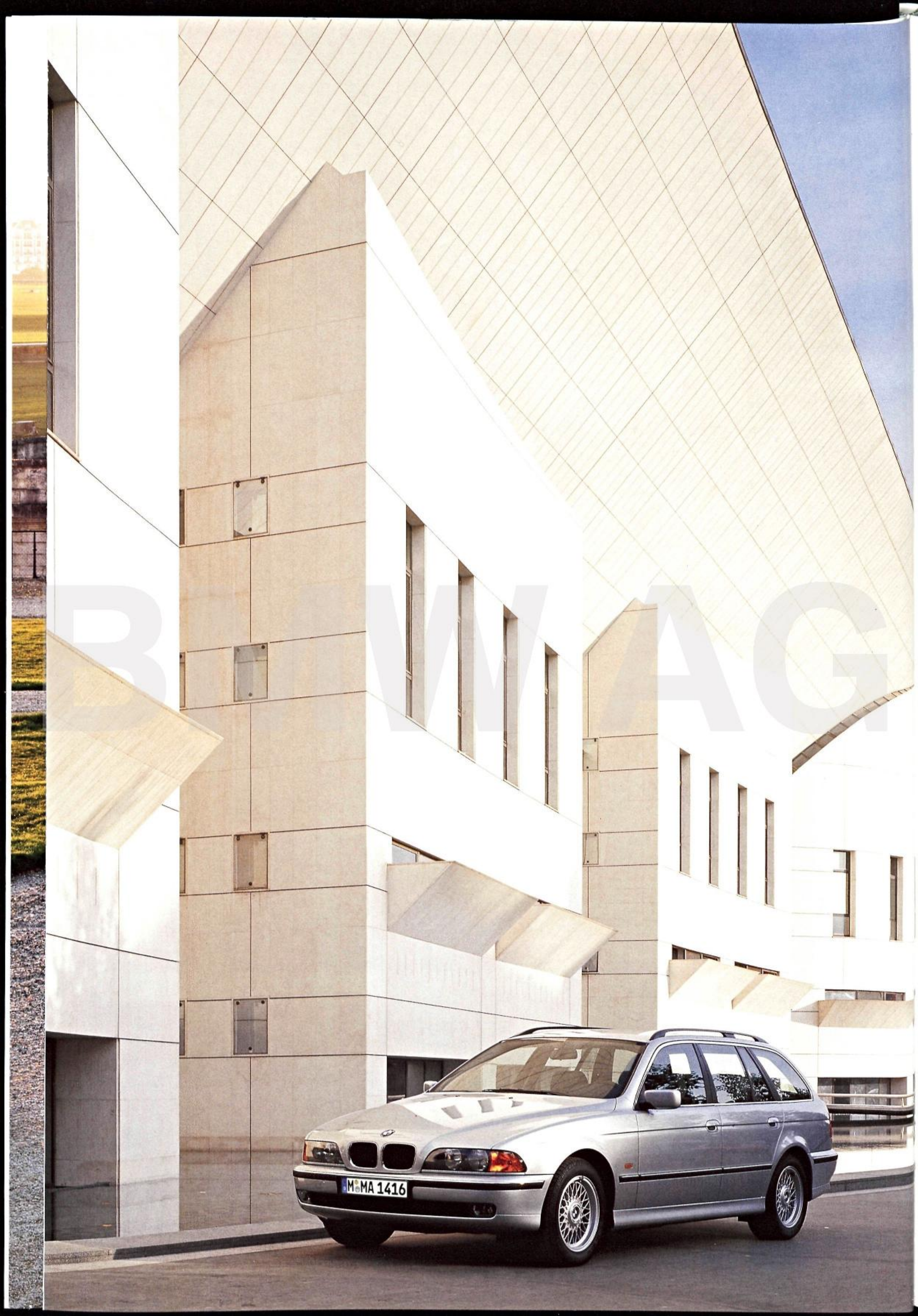
542 AHS 75
388 AHS 75
113 AHS 75


M MA 1416

The new 5 Series touring version combines sporting elegance with versatility. The Z3 roadster is available with two high-performance 6-cylinder engines. The BMW M3 is the first series-produced car to be fitted with a transmission derived from racing car technology. Intelligent lightweight construction results in new designs. BMW extends its guarantees to take back scrapped cars.

New 5 Series touring version

At the beginning of 1997, one-and-a-half years after the new four-door saloon, BMW presented a touring version of the new 5 Series car to the international motoring press. Around 125,000 of the preceding touring cars were produced from 1991 to 1996.

The new touring cars will be delivered to customers from March 1997. At first, they will be available with the 2.8-litre, 6-cylinder petrol engine or the 2.5-litre, 6-cylinder diesel engine. Further 6-cylinder engines and the 540i touring version with the thoroughly revised 8-cylinder engine will follow mid-1997.

When designing the new touring version, special attention was paid to the sporting, elegant lines of the body and the convenience and versatility of the luggage compartment. BMW engineers developed a compact, lightweight rear axle with almost horizontal shock absorbers specially for the new touring version. This construction resulted in a completely rectangular luggage compartment floor. By folding down the rear seat back, the spacious luggage compartment can be enlarged to 1,525 litres according to the VDA standard (German Motor Industry Federation).

Details and special fittings, such as a luggage compartment floor which can be pulled out, make for easier loading and unloading.

High-performance engines for the BMW roadster

After the BMW Z3 roadster was launched successfully in the spring of 1996, preparations began, at the end of the year, for the introduction of two particularly high-performance versions, the Z3 2.8 and the M roadster.

The Z3 2.8 is powered by the BMW 6-cylinder, 2.8-litre in-line engine which develops output of 141kW (192 bhp). Its classic design and advanced engine technology with variable camshaft control, four valves per cylinder and aluminium crankcase ensure outstanding, smooth-running performance and low weight.

With this engine, the roadster, which weighs only 1,260kg, offers an unusually high degree of sheer driving pleasure. The roadster is equipped with the ASC+T traction system as standard. This prevents the wheels from spinning on wet or smooth road surfaces. Like all BMW cars, the roadster's safety features include an anti-lock braking system.

Suspension and chassis were located more rigidly and the wheel track of the rear axle was increased by 67mm in keeping with the higher engine power. The outer appearance of the Z3 2.8 is distinguished from the 4-cylinder models mainly by the chromeline trim, a larger aperture on the front apron and a broader tail.

With the M roadster, BMW M GmbH has developed an open-top sports car which performs almost like the touring car versions of existing models used in motor sport events. With its 3.2-litre, 6-cylinder engine developing output of 236kW (321bhp), the M roadster can accelerate from 0 to 100kph in only 5.4 seconds.

With around 100bhp per litre cubic capacity, this power unit has one of the highest specific outputs of all series-produced induction engines. It has maximum torque of 350Nm at 3,250rpm.

The new 5 Series touring version: elegant, dynamic and extremely versatile. Deliveries to customers began in March 1997.

The M roadster's suspension and chassis are tuned to the high power potential. Fittings and interior design emphasise the roadster's special character.

Sequential transmission for the BMW M3: racing car technology for ordinary roads

The BMW M3 is the first series-produced car which can be fitted with sequential transmission, a system otherwise used mainly in racing cars and motorcycles.

The new gear system, developed in close cooperation with system suppliers, combines the efficiency of manual transmission and the operating comfort of automatic transmission. A hydraulic unit attends to clutch operation and gear shift. There is no clutch pedal. The slip losses associated with automatic transmission do not occur.

The driver can choose between manual and fully automatic transmission. With manual transmission, the various gears are shifted in stages, as with BMW's Steptronic, by moving the gear lever backwards or forwards. In automatic mode, sequential transmission is used like automatic transmission.

The new system is particularly suitable for high-performance engines which require exact gear shift. Their power potential can be used very efficiently. Unlike highly developed automatic transmissions, the gear shifts are still felt. The driver is supported by numerous safety functions.

The electronics laboratory at the BMW Research and Engineering Centre in Munich: here assemblies are developed for car electronics. Prototypes for electronic modules are made on the pick-and-place machine.

Advances in efficient lightweight construction

At BMW, the use of lightweight metals and plastics to reduce weight is always preceded by a comprehensive cost-benefit analysis. Thus, aluminium was first used in engines, then in suspension and chassis, and finally in the body. The use of aluminium for the suspension and chassis of the BMW 5 Series resulted in a weight saving of 36%.

New technologies for joining different materials had to be developed for solutions in keeping with market requirements. Thus, a method was developed to laser-weld steel and aluminium. In addition to the technologies already used in series production, new lightweight construction concepts were tested which proved successful in prototypes.

Shorter development times through linked project organisation

Since the BMW Research and Engineering Centre was put into operation in the mid-1980s, its open structures, designed to encourage communications, have helped to markedly reduce development times for new BMW cars. As products and processes in automobile manufacture became increasingly complex, system suppliers were included, from an early stage, in the project teams at BMW.

The acquisition of Rover Group, the new plant in the United States and Designworks, a BMW design studio in California, have also given the international network of development activities a new dimension.

Data can be exchanged regularly, via satellites, with mobile testing teams in the most remote regions of the world.

With new, computer-assisted working and organisational technologies, BMW is striving to increase efficiency in product development. Computer simulation technology increasingly replaces the lengthy and costly testing of components and vehicles. As a result, fewer expensive prototypes are required during product

development and production planning. Crash test simulation has already resulted in considerable time and cost savings.

On the researchers' trail

Employees, business partners and public were so interested in the working methods at the Research and Engineering Centre that the Company opened the Research and Development Centre Mile in 1993. Here, on a guided tour, limited numbers of groups have since been given an insight into BMW's research and development work.

In 1996, the exhibits and displays were revised and updated to include safety, materials, navigation and light technology. The Research and Development Centre Mile also informs employees about the latest developments in the Company and its environment. The use of modern media provides ideas for employees' own fields of work.

BMW Technik GmbH – new ideas for cars and transport

For twelve years, BMW Technik GmbH has worked on alternative solutions, mostly for the distant future, in all fields of car technology. As an independent development unit, it complements work in other areas of the Company.

Completely new components and processes were developed, taking account of the technological, social and economic trends in the car industry's environment. Once prototypes have been produced, suitable projects are passed on for development for series production.

The 100 or so employees work in extremely flexible structures. The company has all the necessary design and testing facilities, including a design studio and an acoustic wind tunnel.

BMW M GmbH – high performance in technology and design

The company develops the high-performance M Series cars and fills customer orders for individual BMW cars, the performance or design of which exceeds the potential of the models normally produced. BMW M GmbH also organises exacting driver training courses.

In 1996, 12,000 M3 saloons, Coupés and Convertibles were delivered to customers. The company presented the M roadster and the sequential transmission for the BMW M3. In its fifth year, demand for the company's individual cars continued to develop dynamically. Four hundred individual cars were produced in the company's own workshops. In all, 27,000 customers worldwide availed themselves of the service offered by BMW M GmbH and had their car equipped in accordance with their personal wishes. Possibilities include defined, individually made cars and limited production runs.

The BMW driver training courses range from half-day sessions to special one-week training programmes. In 1996, 8,700 customers took part in these courses; 20% more than in the previous year. At the beginning of 1996, motor sport was hived off into a company of its own.

Advances in the recycling of scrapped cars

For years, BMW has been involved in the development of car recycling systems. When the German Regulations on Scrapped Cars enter into force in 1997, they will provide the necessary legal framework. The free-market structures for the dismantling and recycling of scrapped cars, demanded by the car industry and other industrial and business associations, can then be developed.

In 1996, the number of recycling firms which accepted scrapped BMW cars in Germany increased from 50 to 71. These firms guarantee that the cars are recycled in an environmentally compatible way in accordance with uniform BMW standards.

BMW is the first car manufacturer to substantially increase its previous recycling guarantees in Germany. Thus, from the beginning of 1997, all scrapped BMW cars will be taken by the licensed recycling firms.

Cars that are no more than twelve years old, complete and free of waste, will be taken free of charge. If the cars are in good technical condition, a fair market price may be paid.

In Germany, the Netherlands, Austria and Switzerland, BMW cars can be returned through a nation-wide network of recycling firms. Scrapped BMW cars can also be recycled in Italy, France and Great Britain as a result of international cooperation with Fiat, Renault and Rover Group.

In other large sales markets, such as the United States and Japan, recycling structures are being developed to suit the respective market. BMW has always pioneered this field. In Japan in 1996, BMW was still the only car manufacturer with its own recycling programme.

At BMW, the development process has long taken account of the need to design products which are environmentally compatible and can be recycled when they are scrapped. The Company developed the world's first recycling standard according to which all components and materials are assessed. Thus, materials with a negative impact on the environment are routinely excluded.

BMW AG

In 1996, car production in the BMW international system of linked plants increased to an all-time high. Production of the new 5 Series BMW started up in a short time. At the new US plant, as many as 50,000 cars were manufactured in the first full year of production. With flexible systems of working hours, optimum use was made of the capacities of the BMW plants.

BMW car production at an all-time high

In 1996, production at the BMW plants increased by 44,000 to 639,400 cars; a record level. This growth was largely due to the production capacity at the new US plant.

Altogether, 387,900 3 Series cars were produced. While 151,000 of these cars and 8,000 kits came from the Munich plant, 162,000 cars were manufactured at the Regensburg plant.

The 5 and 7 Series BMW and the 8 Series Coupé, which is made in a small production run, are manufactured at the Dingolfing plant. There, production increased by one-quarter to around 250,000 units. The Dingolfing plant also produced 1,500 kits.

In its first full year of production, the Spartanburg plant in the United States manufactured more than 50,000 cars and thus achieved all its targets. The plant in South Africa produced some 15,000 BMW cars and 2,400 Land Rover Defenders. Extensive investments are being made in the South African plant's development and integration into the BMW system of linked production plants in Europe and the United States.

At BMW Mexico and the five assembly plants run by local partners in the Asian-Pacific region, cars are assembled from kits and locally purchased components. BMW cooperates with local assembly plants in order to serve protected markets.

BMW developed its system of linked production plants in Germany

At BMW, the construction of new production facilities and the introduction of new technologies are coordinated with the development of the model range in order to ensure the best possible capacity utilisation. The flexible assignment of personnel within the BMW system of linked plants is also essential. Plants and systems are always equipped with state-of-the-art production technology.

The body shell facilities at the Munich plant were equipped with a new generation of low-maintenance, high-speed, efficient robots. After two years of construction, two new paint shops for water-based finishing coats were put into operation. The investment in the new paint shops involves DM250 million.

The introduction of new structures and sequences was prepared with renovations in the entire assembly area. As a result, conditions for group work and ergonomic work sequences improved markedly.

At the Regensburg plant, BMW launched a comprehensive programme to enlarge the body shell facilities. A new pressing shop with large transfer lines is also being built there. The new facilities will make sequences more efficient and permit more flexible use of capacities throughout the entire system of linked production plants.

In 1996, the Dingolfing plant was influenced by the start-up of the new 5 Series BMW. Demand for these cars was so high that the possibilities of new systems of working hours were exploited to the full in order to increase output. Production exceeded by far the year's original targets. The additional work was carried out very efficiently owing to the flexible assignment of personnel within the system of linked BMW plants in Bavaria.

In the second half of the year, preparations began for the production of the touring version of the new 5 Series BMW.

The first stage of construction of a new paint shop for water-based paints was put into operation with investments of around DM210 million. This environmentally compatible technology has now been introduced to all BMW car plants in Germany and the United States.

In chassis production, a technique was developed to weld together aluminium and steel. As a result, mixed structures, which considerably reduce weight, can now be used in BMW cars.

Increasing production at the US plant, restructuring progresses in South Africa

Mid-year, the new US plant achieved its daily production target of around 250 units. Demand for the Z3 roadster was so high that the plant's production capacity was used only for the roadster from August 1996. Production of 3 Series saloons was moved back to the BMW plants in Germany.

A version with a 6-cylinder engine, the Z3 2.8, and the M roadster were added to the existing range of 4-cylinder models.

In 1996, the BMW plant in South Africa produced 15,000 cars, compared with 18,500 in the previous year. The production of 5 series cars stopped when the previous model was phased out. BMW South Africa now concentrates on the production of 3 Series cars and the assembly of Land Rover vehicles.

Efforts were increased to export cars and components. As a result, 800 3 Series cars were delivered to Australia. In 1996, parts and components worth 900 million rand were delivered to other BMW plants. Exports from South Africa opened up the market to imports of 2,800 BMW cars from other BMW plants.

As part of an investment programme which began in 1995, the BMW plant in South Africa is to be modernised and developed into an internationally oriented production plant by the end of the decade. The investment involves a total of 1 billion rand. The associated introduction of a second production shift will increase the workforce by one-quarter.

Development of the BMW engine plant at Steyr, new technologies in component production

At the BMW engine plant at Steyr, Austria, the investment programme, which began in 1995, continued according to plan. Thus, development and production capacities are being prepared for future tasks in the enlarged Group.

Production capacity will be increased to more than 500,000 engines a year, and the development centre will be expanded. The current workforce will be able to cope with higher annual production as a result of increased efficiency.

In 1996, 400,000 petrol and diesel engines were manufactured at the Steyr plant.

The Landshut plant produces plastic and light cast metal parts and mechanical components. In July 1996, plastics production was certified in accordance with quality standards QS 9000 and ISO 9000-1. The plastics unit received further orders to supply customers outside the Group with pedal systems and bumpers; a clear indication of the unit's high technical standards.

Together with a supplier, the light metal foundry developed a method of sintering, using laser technology. As a result, prototypes for cast parts can now be produced far more quickly and economically.

The particularly economical lost foam method was developed for series production. This increases the precision of the casting processes and greatly reduces the need for subsequent treatment of cast parts.

In 1996, the capacities of the BMW plant at Eisenach, which produces tools and pressed parts, were fully utilised. Around 70% of the orders came from non-group companies. In future, the plant will also produce tools for Rover Group.

Laserwelding the new 5 Series BMW: a particularly accurate manufacturing technique. The quality of the welds is monitored on-line by computer.

BMW industrial park at Wackersdorf under construction

In the spring of 1996, BMW began to construct an industrial park for suppliers at Wackersdorf, to the north of Regensburg. There, a centre of competence for car interiors is being created with investments of around DM120 million. The first company has already started to produce car seats in an existing BMW hall.

In a new form of inter-company cooperation, BMW and suppliers of systems and parts aim to develop particularly efficient production structures at Wackersdorf.

BMW has produced body shells for Convertibles and parts at this site since 1990. Preparations were made to produce instrument panels at the new centre of competence in 1996. Thus, BMW will create a further 150 jobs in this economically weak region.

At Wackersdorf, BMW is also establishing a new supply centre for its production facilities outside Germany. In future, the BMW plants in the United States and South Africa will be supplied, from this site, with German-made systems and parts. BMW Mexico and assembly partners all over the world will be supplied with kits from Wackersdorf. The construction of the new centre will begin in 1997. The centre will provide a further 400 jobs.

The firms already established on the BMW industrial estate at Wackersdorf should offer employment for more than 1,600 people by the end of 1998.

New plants integrated into group logistics

In 1996, the BMW plants at Spartanburg, United States, and Rosslyn near Pretoria, South Africa, were fully integrated into the international network of BMW group logistics. As a result, delivery times for individual cars were reduced and any changes which customers may wish can be taken into account more easily. The time required for replacing parts and components was also reduced in cooperation with the suppliers.

Flows of information are geared increasingly to the main linked processes. Thus, the flow of data is organised from the customer's order, to the car's production and service.

Process consulting for suppliers

The technological development of cars and production processes has increased the importance of suppliers for BMW. Therefore, the Company works constantly to improve methods and techniques in the linked processes for car development and production.

Activities are concentrated on the early stages of development where the most significant increases in efficiency can be achieved for later series production.

Against this background, BMW devised a programme on process consulting for product development and several suppliers used this service in 1996.

Systems to safeguard the high standard of production quality were also enhanced. This field of work focused on comprehensive quality management, methods of preventive quality control and shorter procedures for change in the linked production processes.

The BMW "banking" system for working hours increased scope for flexible working hours. A new system of payment encouraged employees to contribute to group work in new structures. The possibilities of teleworking were tested in a pilot project. Training and education prepared employees for new production technologies and working methods. The number of employees in the BMW car business rose to more than 70,000.

Greater flexibility in personnel capacity

A company agreement on the introduction of a "banking" system for working hours came into force for employees on standard wages at the German plants of BMW AG on April 1st 1996. Thus, the company management and works council took a further step to increase the flexibility of production and safeguard jobs.

Employees can now work up to 200 hours more or less than the number of working hours stipulated in the collective agreements. The "bank accounts" for working hours can be used for several years. This arrangement provides theoretical scope of around 50 days per employee or more than 10 million working hours for all the BMW plants together.

As a result, the plants can react more flexibly to seasonal fluctuations in demand and the special conditions of model change-overs. Personnel capacity can also be adapted, in the medium term, to both economic and model cycles. The new arrangement greatly reduces costs which are otherwise incurred by increasing or decreasing the workforce, by overtime or underemployment.

The new arrangement also guarantees employees a steady income and job security even if their working hours or locations change. Employees also have greater opportunities to organise their time individually.

More flexible systems of working hours proved extremely successful during the production start-up of the new 5 Series BMW at the Dingolfing plant. Around 1,000 employees moved from Munich and Regensburg to the Dingolfing plant for the production of the 5 Series BMW. The employees can reach their new workplace by company bus.

This flexibility enabled the Company to cope with special requirements with the existing workforce, without having to hire temporary personnel, and thus contributed substantially to the smooth production start-up of the new models.

In 1996, various measures were introduced to make working hours and work organisation more flexible and thus increase the efficiency of existing personnel and plant capacities within the BMW system of linked production plants in Bavaria.

Process-oriented working structures to control complex sequences

As sequences became increasingly complex in the Company, smaller tasks were grouped, at an early stage, in linked processes. As a result, group work and cooperation beyond the usual boundaries of each unit became more important. Employees' responsibility and participation in decision-making processes increased.

The working structures required were introduced to most areas of production by the end of 1996. Work and performance targets were all agreed with employees, groups and units.

As a result, employees played an increasing role in the continuous process of improvement. The number of proposals for improvements, submitted by employees, grew by more than 60% to 46,247. More than two-thirds of these ideas were put into practice. The proposals resulted in savings of around DM43 million.

Cooperation in groups with different functions, such as the modular teams for the development of car components, also proved successful among office employees. Using the experience gained so far, new working structures continued to be introduced vigorously throughout the Group.

During a pilot project, a total of 300 teleworkplaces will be established for BMW employees in Germany by the end of 1997. At the end of 1996, 78 specialised employees and executives were working alternately from home or at their workplace at BMW. Teleworking is being tested in a wide range of BMW activities.

Experience so far suggests that teleworking increases both the employee's efficiency and job satisfaction. It offers BMW another opportunity to increase the flexibility of working hours and location.

BMW AG

Workforce at End of Year	1996	1995
BMW Automobiles	70,510	69,653
Head office and Munich plant	22,390	22,738
Dingolfing plant	19,568	18,408
Regensburg plant (incl. Wackersdorf)	6,834	7,257
Landshut plant	3,175	3,086
Eisenach plant	243	232
Berlin plant (excl. motorcycles)	396	401
Sales outlets	5,416	5,252
Spartanburg plant, United States	1,877	1,566
Rosslyn plant, South Africa	2,715	2,990
Steyr plant, Austria	2,143	2,151
Toluca plant, Mexico	48	35
Other facilities, sales companies and investments	5,705	5,537

New system of payment introduced
Suitable conditions were created for the introduction of new working structures and new forms of cooperation in the BMW Group. In 1996, former piecework pay for production workers was largely replaced by the payment of premiums.

Thus, the production employee's personal contribution to group work can be rewarded by a premium. The new system of payment supports the process of agreement on targets in all areas of production. It encouraged employees to take an active part in organising working sequences and thus opened up new productivity reserves.

In a next stage in 1997, former time pay for production workers will be replaced by a new system of time payment. Thus, BMW is creating the conditions for greater flexibility, versatility and responsibility in this area and is encouraging teamwork in new working structures.

Training and further education between technology and team development
In 1996, BMW's further education programmes continued to focus on new production technologies and working methods. Employees were also prepared for new working structures and the Group's increasingly international character.

In addition to specialised training in computer aided design and manufacturing (CAD, CAM), the range of courses on team formation, communicating skills and language training was increased.

In 1996, the Company coordinated the organisation of its education activities in Munich, Dingolfing, Regensburg, Landshut and Berlin. Uniformly high standards of education and competitive costs are guaranteed at the new training centres.

Both the quality and range of education were enhanced. By increasing the efficiency of education activities, costs were reduced by one-tenth per participant per day. At BMW AG, the executives concerned will be responsible for the education budgets from the beginning of January 1997.

In September 1996, 875 young people began their vocational training at one of the BMW plants in Germany; around 50 more than in the previous year. At the end of 1996, more than 2,600 apprentices were employed at BMW AG. All suitable young people who completed their vocational training at BMW were subsequently offered full-time employment by the Company.

At BMW, vocational training takes account of the Company's medium- and long-term need for qualified personnel. In addition to specialised knowledge and skills, attention is paid to the personal and social development of young people.

Various teaching and learning methods were used to promote key qualifications, such as initiative, a sense of responsibility and ability to work in a team.

A broad range of basic qualifications is essential for flexible employment as young

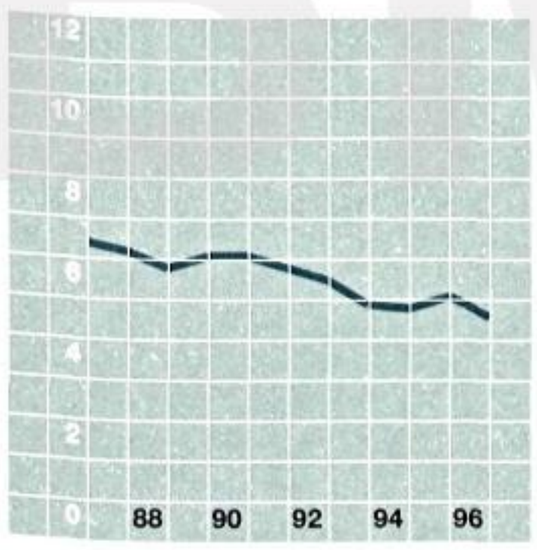
skilled workers. The forty job specifications at BMW are updated regularly in order to gear apprentices' qualifications to the latest conditions and future requirements.

The education programme included international exchanges in 1996. For example, apprentices had an opportunity to spend ten weeks at a Rover Group factory in Great Britain.

Declining sickness rate and increased industrial safety

In 1996, the sickness rate among BMW employees declined to 4.6%; the lowest rate for more than 20 years.

In recent years, industrial safety at the BMW plants has improved considerably due to a large number of individual measures. This trend continued in 1996,



Sickness Rate of Employees at BMW AG
in %

with the number of industrial accidents decreasing by 8%. BMW recorded only 11.7 accidents, requiring notification, per million working hours; the lowest rate ever.

1996/97 negotiating round in Germany

As negotiations were brought forward, regional wage settlements were reached for the (west) German metal and electrical engineering industry in December 1996. The agreement stipulated a 1.5% increase in wages and salaries from April 1st 1997 and a further increase of 2.5% from April 1st 1998. These agreements apply until at least the end of 1998.

The long-disputed question of continued wage payment during sickness was settled. In case of sickness, employees will continue to be paid their regular wages and salaries in full, but overtime will no longer be taken into account.

BMW and the works council had agreed on a transitional arrangement so that work at the Company was not hampered by disputes over the continued payment of wages in case of sickness.

BMW AG

Roadsters have always held a special fascination. In automobile manufacture, the open-top, two-seater BMW 328 Mille Miglia sports cars have stood for outstanding engineering and design for 60 years. With the introduction of the Z3, BMW launched a new generation of roadsters with the blue-and-white emblem. Although it is a thoroughly modern car, the Z3 incorporates the engineering principles of its classic predecessors. Thus, it combines the advantages of state-of-the-art vehicle technology with sheer driving pleasure in its most original form.

The roadster: a special kind of car

While an engine's technical data or a car's performance can be exactly defined and compared, not all the qualities that distinguish a roadster can be expressed in figures.

In an age when cars are judged increasingly by rational criteria and the differences between the individual models are becoming more difficult to spot, the roadster is in a category of its own; a category in which character and originality count. If a roadster has these qualities, it enhances the prestige not only of its marque, but of motoring itself.

Emotions play a far greater role when developing and, in particular, when buying a roadster than is the case with other cars. A roadster is rarely a means to an end; it is not primarily a practical vehicle for routine driving or professional use. On the contrary, a roadster is an expression of a particular lifestyle; a tool with which to experience sheer driving pleasure at its best.

BMW Z3 2.8 and BMW 328: 60 years of roadster history at BMW. In June 1936, the legendary BMW 328 made its debut on the Nürburgring. The first Z3 roadsters were delivered to BMW dealers in Germany and the United States in the spring of 1996.

A vehicle concept with tradition

Originally used to describe a sporting, all-round horse, the term "roadster" was soon applied in the car world. It still describes a compact, powerful two-seater sports car with a light hood. Thus, the roadster differs markedly from the comfortable convertible which is usually derived from a saloon or coupé.

The roadster is a fast, agile sports car which gives the driver a feeling of direct contact with road and nature. Its appearance is a clear expression of its character. Low and broad, with a long bonnet and short rear, the roadster shows what it was made for: open-top motoring for nature-loving drivers.

Like the saloons, these cars have undergone marked changes in the course of development. While the open-top, two-seater sports car of the 1930s and some of the models of the 1950s were usually spartan sporting machines, offering the minimum of comfort for driver and passenger, today's roadster presents quite a different picture.

BMW roadster drivers can now enjoy direct contact with road and nature without dispensing with the comforts offered by modern automobile engineering. Power-assisted steering and automatic transmission, an electrically operated hood and air-conditioning make driving a roadster more enjoyable than ever before.

For many motorists, a modern roadster, such as the BMW Z3, is an attractive, sporting alternative and complement to routine motoring.

M-BM 328
M HX 1596

The origins of "sheer driving pleasure": the first BMW roadsters

The first BMW car, the 3/15bhp "Dixi", was given a sporting look and a more powerful engine of 18bhp in 1930. It went down in motoring history as the BMW Wartburg Sport. This delicate, filigree-looking two-seater is worlds away from today's roadster, and yet the basic idea is the same: to provide two people with a sporting vehicle which brings them into close contact with nature and the elements.

In the early 1930s, races could still be won with an 18bhp engine. Thus, the BMW Wartburg Sport with its striking pointed tail had success on the race track.

The first successors to this original model, the BMW 315/1 and BMW 319/1, were built from 1934. Both these models were far more impressive roadsters, possessing all the attributes of a classic two-seater, and can thus be called the Z3's direct forerunners.

They combined a sporting, sturdy chassis with a powerful 6-cylinder, in-line engine with 40 or 55bhp beneath a strikingly long bonnet. The low and dynamically shaped body enclosed the occupants like a tailor-made suit.

The early BMW roadsters achieved numerous race track successes and aroused many an admiring glance on boulevards throughout the world. They were thoroughbred sports cars, and yet they already offered a minimum standard of comfort and good handling and performance.

BMW 328: the roadster legend

In 1936, a new era began for BMW and international motor racing. Never before had a sports car dominated its category like the BMW 328 roadster. Its design principles, such as lightweight construction, outstanding aerodynamics, high performance and elegance, are characteristics of the BMW marque to this day.

With a 2-litre, 6-cylinder, in-line engine developing output of 80bhp, and a weight of only 830kg, the BMW 328 still thrills ambitious roadster drivers today. It is a thoroughbred, a sports car such as motoring history has rarely produced.

This applies to an even greater extent to the legendary 328 roadster with its streamlined, lightweight metal body. Connoisseurs consider these racing cars, which became famous as the "Mille Miglia" cars, automobile works of art.

Thus, it is no wonder that these cars influenced international sports car manufacture until well into the 1960s. During five years, 464 of the BMW 328 models were made; almost half of them are still on the road today.

BMW 507 and Z1 roadsters: quite different but equally fascinating

In 1956, the designer Albrecht Graf Goertz created a masterpiece: the BMW 507 roadster. For many, the 507 is not only the most splendid BMW, but also one of the most attractive cars of all. Equipped with a powerful 3.2-litre, 8-cylinder, lightweight metal engine with output of 150bhp, which was unique in Germany at that time, this gorgeous sports car achieved speeds of well over 200kph. It very soon became one of the most desired classics in the motoring world.

These cars were particularly exclusive because only 252 units were produced from 1956 to 1959.

After this highlight in the 1950s, BMW focused on the development of the New Range of BMW cars. This comprised mainly saloons and large coupés; the predecessors of today's 3, 5, 7 and 8 Series cars. At the beginning of the 1980s, BMW systematically extended the model range to include new body versions. Thus, Coupé, Convertible, touring and compact versions were added to the range of 3 Series cars.

In 1986, a new BMW roadster, the Z1, was created as an independent project, parallel to series development, by the then-young BMW Technik GmbH. This company develops particularly promising innovations for car and transport technology.

The Z1 was originally conceived only as a test vehicle for technologies for new car concepts, new materials and new forms of work organisation. However, when it was presented at the 1987 International Motor Show in Frankfurt, it aroused such strong buying interest that the company decided to produce a small number of these roadsters.

Now a collector's item, the Z1 roadster offered several unusual characteristics, such as an integral frame of lightweight metal, a body made of recyclable plastics and doors which can be lowered.

The rear axle developed for the Z1 was later used in 3 Series cars and contributed to the outstanding performance of the M3, the most successful touring car version of an existing model of all times. The design is also used in the Z3.

With the Z1, which reached a top speed of 225kph, BMW pioneered and re-defined the concept of a modern open-top sports car. The "edition" was limited to 8,000 units from 1988 to 1991.

BMW Z3 roadster: motoring at its finest

The BMW Z3 roadster, introduced in 1996, is the youngest link in the long chain of thoroughbred roadsters. It combines harmoniously their classic lines with modern style elements. Even when it is at rest, the Z3's appearance suggests what the motorist will feel when the car is in action: sheer driving pleasure in its most original form.

This sports car is an independent development, based on the design and components of the 3 Series BMW. It combines the fascination of driving a roadster with state-of-the-art technology, which also meets the highest standards of safety and environmental protection. Its level of comfort makes even long trips a pleasure.

While the two versions available from the start with 1.8- and 1.9-litre, 4-cylinder engines are dynamic, the new 6-cylinder Z3 2.8 and M roadsters offer something really unusual.

The Z3 2.8 is both powerful owing to its 6-cylinder, in-line engine, which accelerates strongly yet smoothly from very low engine speeds and develops output of 192bhp, and comfortable owing to its exclusive interior fittings.

The M roadster is a pure road machine. The 3.2-litre power unit with output of 321bhp results in breathtaking performance which is reminiscent of the days of classic racing cars. This roadster achieves levels of performance which can be experienced in only a few of the world's sports cars.

The enthusiasm and demand for the new BMW roadsters, which are produced exclusively in the US plant at Spartanburg, have surpassed all expectations. This shows that people all over the world still, and perhaps more than ever before, want to experience sheer driving pleasure.

BMW AG

BMW Motorcycles	1996	1995
Sales in DM million	935	909
Production in thousands	49.0	52.7
Employees at end of year[1]	1,754	1,760
Result from ordinary business activities in DM million	19	7

[1] Excl. sales outlets in Germany

In 1996, the BMW motorcycle business developed satisfactorily. Deliveries and sales continued to grow. In its first full year of production, the R 1100 RT tourer became the most successful BMW motorcycle. The dynamic performance and design of the new K 1200 RS strengthened the brand's image. The single-cylinder F 650 ST attracted new customers.

World market for motorcycles grows again

In 1996, worldwide deliveries of new motorcycles to customers increased after three years of stagnating demand. Some 850,000 motorcycles were registered in the classic markets; 5% more than in the previous year.

In the United States and Germany, the world's largest motorcycle markets, demand increased by 7% to 224,000 and 190,000 units respectively. In Germany, the market has more than doubled since the end of the 1980s. In 1996, growth was largely due to the special trend in motorcycles up to 125cc.

Numerous markets, such as Great Britain and France, recorded two-figure growth rates. In contrast, demand decreased in Japan and Spain.

BMW's new sporting tourer, the K 1200 RS, in the Parc de la Villette in Paris. In the background, the shiny sphere of the Géode cinema.

Trend towards big bikes continues

Demand for motorcycles with more than 750cc rose by 12% and thus, again, above the average. With around 380,000 units, these powerful machines achieved a 45% share of the total motorcycle market.

In 1996, cruiser machines were again the motorcycles in greatest demand worldwide. With more than 40%, the comparatively small segment of touring machines achieved the strongest growth. This was largely due to the success of the new BMW R 1100 RT.

BMW motorcycles in demand worldwide

In 1996, deliveries of 50,340 BMW motorcycles to customers all over the world surpassed the previous year's record. BMW had a market share of more than 10% for motorcycles with more than 750cc.

With 21,150 registrations, Germany was the most important sales market for BMW motorcycles. Some 58% of all BMW motorcycles were exported, compared with 57% in the previous year.

In 1996, the most important export markets were the United States with around 5,000 units, followed by Italy and France with 4,250 and 4,100 units respectively. BMW motorcycles achieved particularly high growth rates in Belgium and Austria with 1,600 and 1,700 units respectively; both new records.

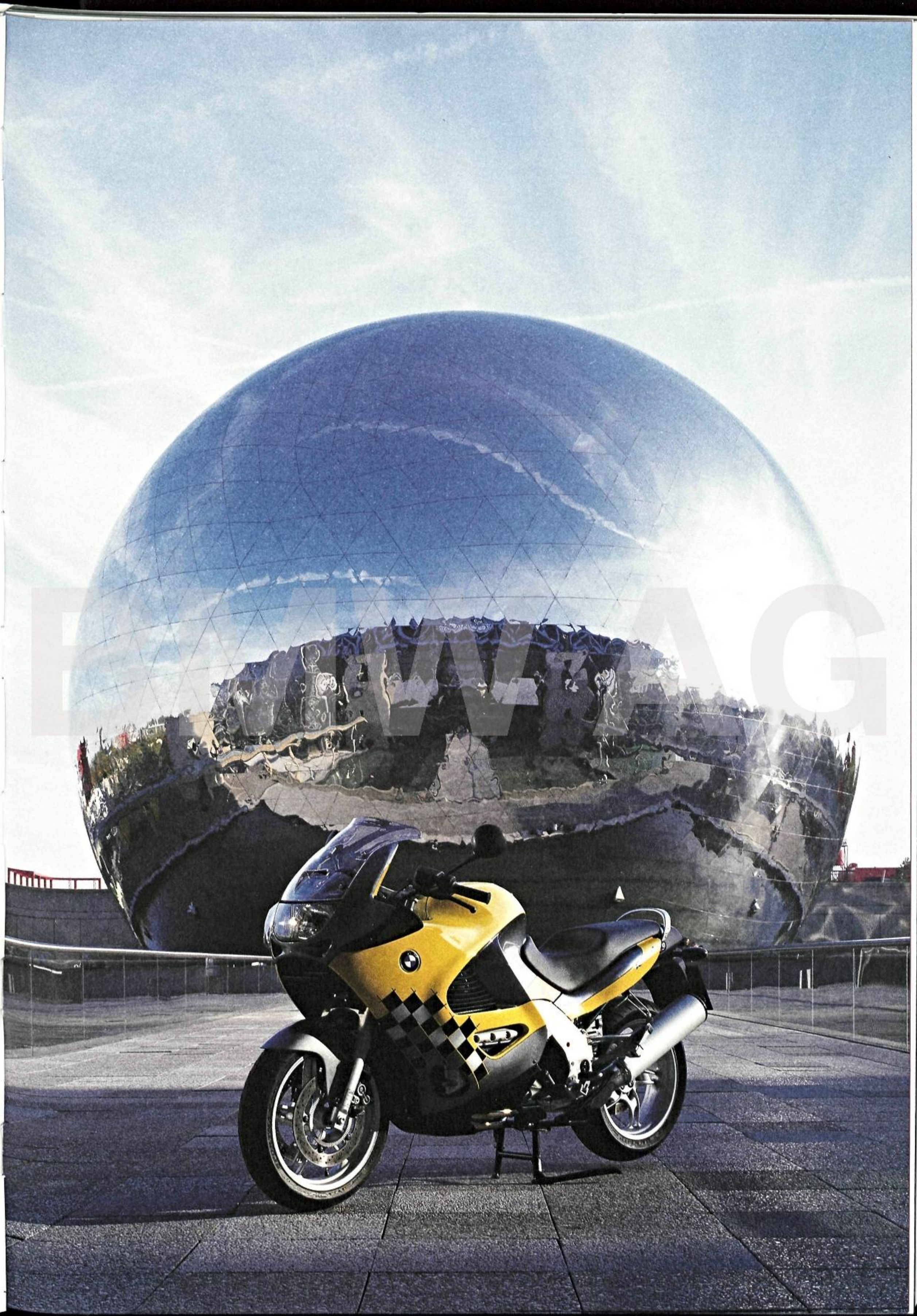
In Germany, BMW machines maintained their leading position in the segment of motorcycles with more than 750cc. In 1996, they achieved this position for the first time in Italy, Spain and South Africa.

Range of BMW motorcycles streamlined

In 1996, the range of BMW motorcycles was streamlined. It now comprises three distinct series: the single-cylinder F Series motorcycles, the new R Series motorcycles with 2-cylinder, flat twin engines and the K machines with 4-cylinder, in-line engines.

After more than 70 years, the last motorcycle of the first generation of BMW machines with flat twin engines came off the assembly lines in December 1996. Production of the 3-cylinder K Series motorcycles was also phased out according to plan.

Higher-priced motorcycles accounted for a far larger share of sales. With 10,500 units, the R 1100 RT replaced the F 650 as the most popular BMW motorcycle.



Sporting BMW K 1200 RS presented, new single-cylinder F 650 ST

With the presentation of the now legendary sporting BMW tourer, the R 100 RS, in 1976 and the introduction of the K 100 RS in 1983, BMW stimulated decisively the segment of sporting tourers. The new K 1200 RS also sets yardsticks.

The new model will be delivered to customers from March 1997. The K 1200 RS is distinguished mainly by its completely new, individual design. Its technical innovations include a new cast aluminium frame and a high-performance, 4-cylinder engine with 1200cc; a first in BMW motorcycles.

Numerous adjusting devices enable the motorcyclist to achieve the most ergonomical and comfortable riding position for individual requirements. The technology, ergonomics and design of the new K 1200 RS set new standards for sporting tourers.

The combination of a new electronic engine management system with two controlled catalytic converters ensures low levels of exhaust emissions. The anti-lock braking system, which is also standard, and the BMW Telelever front-wheel suspension ensure a high degree of motorcycling safety. The K 1200 RS thus exemplifies the high standard of environmental and safety technology used in BMW vehicles.

Three years after the introduction of the Funduro F 650, a second model, the F 650 ST, was added to the BMW range of single-cylinder motorcycles. While the F 650 can be used as a cross-country machine, the F 650 ST is primarily a road machine. The low seat makes this machine particularly suitable for female motorcyclists.

So far, more than 30,000 F Series machines have been delivered. For around 80% of the customers, the F 650 was their first BMW motorcycle.

Continuing upward trend in the BMW motorcycle business

In 1996, sales generated by BMW motorcycles, including parts and accessories, increased by 3% to DM935 million. The motorcycle business made a positive contribution to BMW Group earnings as a result of a favourable model mix and further rationalisation.

In 1996, the Berlin plant produced some 40,000 2- and 4-cylinder motorcycles, compared with 42,000 in the previous year. In addition, Aprilia in Noale near Venice assembled around 8,500 F 650 motorcycles on BMW's behalf.

With flexible systems of working hours, the Berlin plant was able to adjust production capacity to seasonal fluctuations in demand and the special requirements of model change-overs. Thus, in the first half of the year, a second shift was introduced in the final assembly process.

Motorcycles for an individual lifestyle

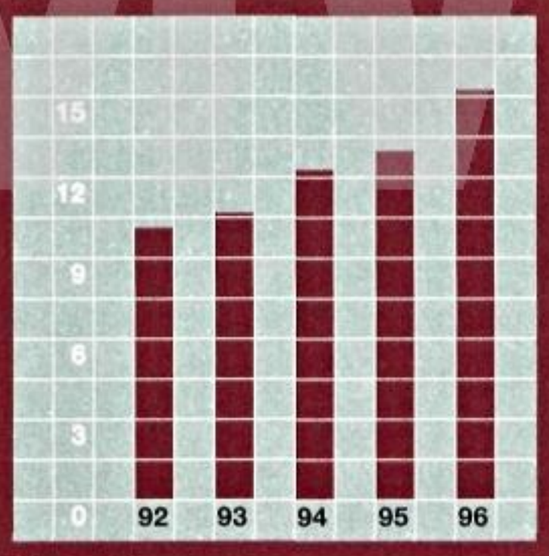
In the classic motorcycle markets, demand is influenced largely by the customers' wish to engage in individual and exciting leisure activities. Thus, the share of powerful motorcycles is expected to remain high. The BMW range of motorcycles will continue to focus on this segment. BMW is planning to strengthen its market position and attract new customers with further innovations to its range.

In the emerging Asian markets, sales opportunities for BMW motorcycles are increasing in business with public authorities. In Indonesia, the assembly of BMW motorcycles for the private market will begin in 1997.

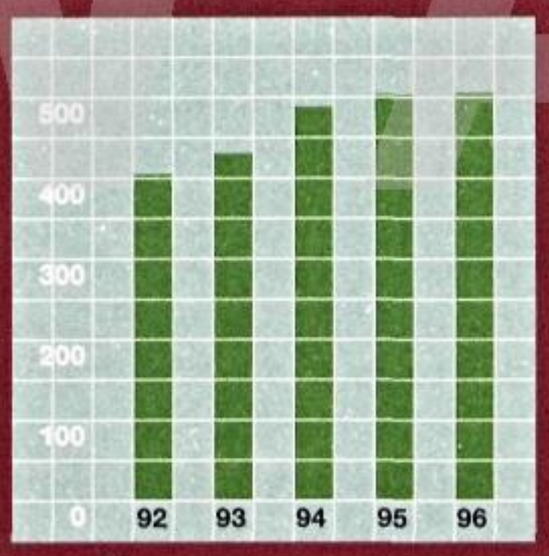
Demand is expected to consolidate in the classic motorcycle markets. BMW is endeavouring, at a high sales level, to achieve further qualitative and quantitative growth.

Rover Group Automobiles. **Rover Group is both the largest automobile manufacturer in Great Britain and the country's largest automobile exporter. Sales and vehicle production rose steadily. Rover Group has recruited some five thousand additional employees within three years. With Rover, MG, Mini and Land Rover, the company has marques which are rich in tradition and have an international reputation. New products will be launched soon.**

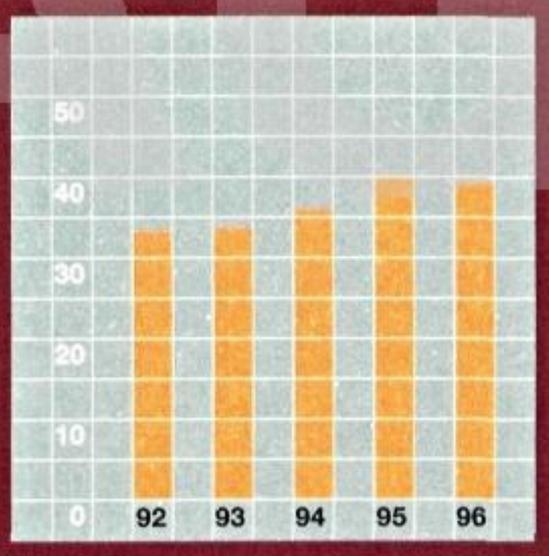
BMW AG



Rover Group
Sales
in DM billion



Rover Group
Vehicle Production
in thousands



Rover Group
Employees
in thousands

Rover Group Automobiles	1996	1995
Sales in DM billion	15.2	13.0
Production in thousands	504	504
Employees in thousands	39.4	40.1
Result from ordinary business activities in DM million	– 279	– 335

In 1996, Rover Group delivered more than 500,000 vehicles to customers in a single year; the highest number since 1988. The share of higher-priced models rose. For the first time, more than half the vehicles produced were exported. Production of the new Rover 200 gained momentum. The MGF upholds the tradition of a classic sports car. Land Rover achieved a new high for the fourth successive year. The sales organisation was developed worldwide; new logistical and ordering systems increased the quality of customer service.

Rover Group increases sales to more than 500,000 vehicles

In 1996, Rover Group delivered 507,254 Rover, MG, Mini and Land Rover vehicles to customers worldwide; a 5% increase on the previous year. Thus, for the first time since 1988, Rover Group sold more than 500,000 vehicles in a single year.

The company's traditional, high dependency on the UK market continued to decrease. In 1996, with 274,900 units, Rover Group for the first time delivered more vehicles to customers outside Great Britain than in its home market. The company's market position improved worldwide as a result of new models and a re-oriented sales policy.

In 1996, deliveries of Rover, MG and Mini cars increased by 3% to 382,000 units. The development of Rover sales was influenced by the introduction of new models. While deliveries of the Rover 200 were affected by the model change-over, sales of the Rover 400, introduced in the previous year, were satisfactory, growing by two-thirds to 127,900 units.

The Rover 400 is available as a four-door saloon or a five-door version with hatchback. In 1996, more than 60% of customers chose five-door models. Rover Group was particularly successful with the new MGF sports car, 12,800 of which were delivered to customers in the first full year of production. MG cars last achieved a comparable twelve-month figure at the beginning of the 1980s. Some 17,400 Minis were delivered to customers. Minis became available with improved interior fittings, safety and security technology from the end of 1996.

Land Rover sales continued to develop satisfactorily as in previous years. Worldwide deliveries of Range Rover, Discovery and Defender vehicles rose by 8% to 125,200 units, achieving a new high for the fourth successive year.

With more than 65,000 units, the Discovery was again the most popular Land Rover model. Deliveries of Range Rovers and Defenders numbered around 30,000 units each. Demand increased for all models. Almost 50% of Land Rover vehicles were sold in overseas markets outside Europe.

Rover Group sales in Europe stable

In 1996, Rover Group sales did not develop uniformly in Europe. While new registrations declined in Great Britain and France, two-figure growth rates were recorded in most other European markets. In Europe, total deliveries of around 412,000 Rover Group vehicles were 2% higher than the previous year's comparable figure.

In Great Britain, Rover registrations declined by 7% to 232,400 units mainly because demand for the Rover 100 decreased and Rover continued to reduce its involvement in the unprofitable British business market. Rover Group vehicles accounted for an 11% share of the UK market.

In 1996, Italy replaced France as Rover Group's largest foreign sales market. Lively demand, mainly for Rover 200 and 400 cars, made total Rover Group sales in Italy rise by more than 20% to 46,700 units.

The company achieved extraordinary growth in Germany, with sales increasing by almost two-thirds to 21,700 vehicles. This was mainly due to the increasing availability of the new models and the development and restructuring of the sales organisation. In 1996, 91 new dealer businesses were opened in Germany for Rover Group products. At the end of the year, the dealer network comprised around 270 businesses, including 110 sales partners who also represent BMW.

Further growth overseas

Overseas, Rover Group achieved a renewed sales increase of 19% to 95,500 units. Rover and Land Rover vehicles and the new MGF all contributed to this development.

In North America, deliveries of Land Rover vehicles to customers increased by 16% to 24,100 units. The sales volume has increased five-fold since 1993. The Discovery accounted for more than two-thirds of sales, making it, once again, the most successful model.

Car Markets in Countries with Rover Group Sales Companies[1]		1996	1995
Europe			
Belgium	Total market	397,400	358,900
	Rover Group	4,900	4,000
France	Total market	2,132,100	1,930,500
	Rover Group	35,600	45,600
Germany	Total market	3,496,300	3,314,100
	Rover Group	21,700	13,300
Great Britain	Total market	2,025,500	1,945,400
	Rover Group	232,400	249,300
Ireland	Total market	115,100	87,000
	Rover Group	4,400	3,100
Italy	Total market	1,736,000	1,731,700
	Rover Group	46,700	38,500
Netherlands	Total market	473,500	446,400
	Rover Group	7,000	7,000
Portugal	Total market	217,900	201,500
	Rover Group	11,700	8,400
Spain[2]	Total market	911,100	834,400
	Rover Group	25,800	21,700
Overseas			
Australia	Total market	492,100	488,400
	Rover Group	5,800	5,700
Canada	Total market	660,700	669,600
	Rover Group	900	800
Japan	Total market	4,668,700	4,443,900
	Rover Group	27,300	25,200
South Africa	Total market	249,800	236,600
	Rover Group	3,700	1,800
United States	Total market	8,529,000	8,635,400
	Rover Group	23,200	20,000

[1] Total market: cars
Rover Group: Rover, MG, Mini and Land Rover vehicles
[2] Including Canary Islands

With 27,300 new registrations, Japan remained Rover Group's largest overseas sales market. While demand for Rover cars was stable, new registrations of Land Rover vehicles rose by 70% to 5,900 units. In Japan, MGs and Minis have aroused special interest for many years. With 2,800 units, Japan was the largest sales market for MGs.

In Australia, demand for Land Rover vehicles increased by 2% to 5,800 units. In South Africa, another of the company's traditional sales markets, demand doubled to 3,700 units. The newly established Defender assembly plant at Pretoria contributed substantially to this development.

Systematic development of the sales organisation

In the European markets, advantage was taken of the opportunities offered by the larger group to develop an efficient dealer network. Thus, every second Rover dealership that joined the network in Germany in 1996 already represented BMW. In Great Britain some 500 and in continental Europe more than 1,000 businesses sold Rover Group products at the end of the year.

In North America, the sales network for Land Rover vehicles now comprises more than 100 businesses, including 42 exclusive Land Rover Centres and 60 shared dealers. In addition to investment in buildings and facilities, training and education were promoted in order to ensure that service staff satisfy the requirements associated with the markedly increased sales volume.

The Rover Study Centre in Japan was also opened to provide technical training for customer service staff. The establishment of new Land Rover Centres also began in Australia. The first of the 23 Land Rover Centres planned was opened in Southport, Queensland, in October 1996.

In 1996, the BMW sales company in Mexico also assumed responsibility for the sale of Rover Group products. In Brazil and Sweden, the existing Rover Group companies were integrated into the respective BMW sales operation. BMW and Rover Group products are now sold through joint group companies in six markets.

In addition, Rover entered twelve new markets. Rover Group products are sold by independent importers in more than 100 countries throughout the world. Sales in these markets grew by 43% to 58,700 vehicles.

Efficient sales and logistical systems continued to be introduced to support the growth of international business. These systems aim primarily to improve ordering and delivery processes and the quality of information flow throughout the entire sales organisation.

BMW AG

Rover

111i, 111Si, 111SLi, 111GSi
1120cc, 44kW (60bhp)
114GTa, 114GSi
1396cc, 55kW (75bhp)
115SD, 115SLD
1527cc, 42kW (57bhp)

214i
1396cc, 55kW (75bhp)
214Si
1396cc, 76kW (103bhp)
216Si, 216SLi
1589cc, 82kW (111bhp)
200Vi
1796cc, 110kW (150bhp)
220D, 220SD
1994cc, 64kW (87bhp)
220SDi
1994cc, 77kW (105bhp)

1.6i Coupé
1589cc, 82kW (111bhp)
1.8 VVC Coupé
1796cc, 110kW (150bhp)
1.6 Cabriolet
1589cc, 82kW (111bhp)
Tourer 1.6
1589cc, 82kW (111bhp)

414i, 414Si
1396cc, 76kW (103bhp)
416Si, 416SLi
1589cc, 82kW (111bhp)
420i, 420Si, 420SLi, 420GSi
1994cc, 100kW (136bhp)
420D, 420SD
1994cc, 64kW (87bhp)
420SDi, 420SLDi, 420SLi, 420GSDi
1994cc, 77kW (105bhp)

618i, 618Si
1850cc, 85kW (115bhp)
620Si, 620SLi, 620GSi
1997cc, 96kW (131bhp)
623GSi
2259cc, 116kW (158bhp)
620ti
1994cc, 147kW (200bhp)
620SDi, 620SLDi
1994cc, 77kW (105bhp)

820i, 820Si, 820Li, Sterling
1994cc, 100kW (136bhp)
Vitesse
1994cc, 132kW (180bhp)
825D, 825SDi, 825SLDi
2498cc, 89kW (121bhp)
825i, 825Si, 2.5 Sterling
2497cc, 129kW (175bhp)
Coupé
2497cc, 129kW (175bhp)

MG

MGF 1.8i
1796cc, 88kW (120bhp)
MGF 1.8i VVC
1796cc, 110kW (150bhp)

Mini

Mini 1.3i, Mini Cooper 1.3i
1275cc, 46kW (63bhp)

Land Rover

Defender 90
2495cc, 83kW (113bhp)
Defender 110
2495cc, 83kW (113bhp)
Defender 130
2495cc, 83kW (113bhp)

Discovery Tdi (3-door)
2495cc, 83kW (113bhp)
Discovery Tdi/S/XS/ES *(5-door)*
2495cc, 83kW (113bhp)
Discovery V8i (3türig)
3947cc, 134kW (184bhp)
Discovery V8i/S/XS/ES (5-door)
3947cc, 134kW (184bhp)

Range Rover 4.0/4.0 SE
3950cc, 140kW (190bhp)
Range Rover 4.6 HSE
4554cc, 166kW (225bhp)
Range Rover 2.5 DT/DSE
2497cc, 100kW (136bhp)

Rover Group
Automobile Range

Automobiles
(from left to right)
Front row:
Rover 216SLi, Rover 416Si,
Rover 420SLDi, Rover 618i
Middle row:
Mini 1.3i, Rover 111SLi, Rover 1.6
Cabriolet, Rover 1.8 VVC Coupé,
Rover 2.5 Sterling, Rover Coupé
Back row:
MGF 1.8i VVC, Range Rover 4.6
HSE, Discovery XS, Defender 110

Rover, MG, Mini and Land Rover
vehicles at Blenheim Palace
near Oxford.

BMW AG

P790 SVC
P798 SVC
P748 KWK
P825 FJW
P794 SVC
P868 WOM
P684 XON
P538 VAC
P272 VON
P925 YON
P778 VDU
P243 ARW
P307 ARW

P810 SVC

Rover Group's new Design and Engineering Centre opened. Advanced communications technology connects it with the BMW Group's international system of linked development facilities. The Mini, still unique among small cars, underwent comprehensive technical changes. With the KV6 engine, Rover presented the third innovation in its engine range within twelve months. In 1996, Rover Group received the prestigious Queen's Award for Technology.

Design and Engineering Centre at Gaydon completed

In October 1996, the first associates moved into Rover Group's new Design and Engineering Centre at Gaydon. The complex of buildings was constructed on the company's test grounds with investments of around DM50 million. It is centrally located between the Longbridge and Solihull factories near Birmingham and the Cowley factory near Oxford.

The new centre brings together Rover's design and engineering resources which used to be at different sites. Thus, it will encourage efficient teamwork. The experience and know-how gained in the course of ten years at the BMW Research and Engineering Centre in Munich were used to design office space, organisational structures and technical facilities.

Up to 1,000 associates will work in the spacious, open-plan building, covering an area of 26,000sqm. The proximity to test stands, test laboratories and prototype manufacturing is expected to increase the efficiency of the entire development process.

The site includes vehicle test tracks and proving grounds with a total length of some 50km.

With advanced communications technology, Rover Group's Design and Engineering Centre is integrated into BMW Group's system of linked development facilities. In Great Britain, the centre is the most modern of its kind.

Technical improvements for the Mini

The Mini underwent the most comprehensive technical changes since its introduction in 1959. They concentrated on active and passive safety. Thus, from the autumn of 1996, the Mini was fitted, as standard, with driver airbag and automatic belt tighteners.

The 1.3-litre power unit was equipped with electronic engine control. With unchanged output of 46kW (63bhp), torque increased to 95Nm at 3,000rpm. Thus, the revised Mini also complies with strict regulations on exhaust and noise emissions.

In Europe and overseas, the Mini is still considered unique among small cars. Its design and agility predestined it, from the very start, for the world's metropolises. With the latest improvements, the Mini will meet all the technical requirements for licensing until a new generation of cars is created in the next decade.

New 6-cylinder engine for the Rover 800

The new 6-cylinder V-engine, developed by Rover for the Rover 800 Series, was introduced in the spring of 1996. It was the third innovation in the engine sector within twelve months, having been preceded by the L Series diesel engines with direct injection and the 1.6- and 1.8-litre versions of the K Series.

The compact KV6 2.5-litre engine replaces the 2.7-litre power unit which used to be purchased. Despite the reduction in cubic capacity, output rose to 129kW (175bhp). The engine develops a maximum torque of 240Nm at 4,000rpm. With the new engine and four-gear automatic transmission, the Rover 800's fuel consumption was reduced by 15% to 8.7 litres per 100km.

Introduced internationally during 1996, the mid-engined MGF upholds the tradition of British two-seater sports cars.

The reduction in fuel consumption and emissions and the improvement in output are primarily due to the variable intake system, the use of four-valve technology and a new camshaft drive. The engine block and cylinder head are made of aluminium.

Computer simulation at Solihull, new test laboratories at Gaydon

With computer simulation technology, such as is used throughout the BMW Group, Rover Group engineers simulated production facilities and processes long before production began. In 1996, computer simulation was used to design the new paint shop at the Solihull factory and plan assembly areas for a future Land Rover vehicle.

As a result, series development and production planning progressed simultaneously. Numerous suppliers contributed their know-how to the development processes at an early stage.

The test laboratory, which Rover developed jointly with a Canadian company, combines an environmental chamber and a road simulation facility. In this laboratory, vehicle handling can be tested simultaneously in different road and weather conditions. Expensive prototypes are thus used more intensively and test times are generally shorter.

The construction of a vehicle emissions laboratory was largely completed in 1996. Thus, Rover Group is prepared to meet all identified and expected regulations on emissions.

Rover Group's new Design and Engineering Centre at Gaydon will house up to 1,000 engineers, designers and technicians. Built on two levels, the centre of competence offers outstanding conditions for efficient teamwork. The design studios and workshops are on the ground floor.

CARE recycling programme extended to ten manufacturers

In 1996, Rover Group continued to be the project manager for the UK Consortium for Automotive Recycling (CARE). Ten manufacturers, together accounting for 85% of car sales in Great Britain, were involved in this scheme. Leading dismantling and recycling businesses also took part.

The companies undertake voluntarily to observe strict environmental standards for the recycling of scrapped cars. These standards have meanwhile set an example for the whole of British industry. In 1996, CARE demonstrated, in particular, how materials from scrapped vehicles can be recycled economically for re-use in industrial production.

Priority was given to both the reduction of waste from the car disposal process and the protection of soil and groundwater. The development of recycling systems also aimed to generate increased demand for recycled materials and create processes to upgrade waste materials.

Rover Group receives Queen's Award for Technology

In April 1996, Rover Group received the prestigious Queen's Award for Technology. This prize was awarded for MEMS, Rover's Modular Engine Management System. The advanced system is fitted to the new KV6 engines and the 4-cylinder, naturally aspirated, turbo-charged K Series engines. It ensures particularly economical fuel consumption and low exhaust emissions.

Rover Group vehicles also received various accolades worldwide. In Japan, for example, the MGF was "Import Car of the Year 1996", and in Germany the readers of a leading automobile journal voted the Range Rover the best imported off-road vehicle.

In 1996, Rover Group's investment programmes continued according to plan. They focused on preparations for the production of new models. New technologies increase the flexibility and efficiency of the production processes. Suppliers were also prepared to meet new challenges. Comprehensive component management and cooperation within the BMW Group are realising considerable cost-saving potential.

Rover Group vehicle production influenced by new models

In 1996, Rover Group produced 504,100 vehicles and thus slightly exceeded the previous year's level despite the changeover in one of the two large-volume models.

The Longbridge factory, the company's largest, was influenced by the start-up of the new Rover 200 and the MGF sports car in 1996. Total production of small and medium-sized Rover models, Minis and sports cars increased by 10% to 321,300 units. In contrast, production decreased to some 56,000 units at the Cowley factory where Rover 600 models and Rover 800 saloons and Coupés are manufactured. This was mainly due to the advanced model cycle of these cars and site development work.

Production at the Land Rover factory at Solihull continued at the previous year's markedly increased level. Production processes were optimised. Land Rover produced a total of 126,800 Range Rover, Discovery and Defender vehicles. Assembly facilities were set up for another Land Rover model.

Rover Body and Pressings at Swindon manufactures steel pressings for Rover Group's vehicle production. Aluminium parts are purchased from suppliers.

Investment programmes continued

In 1996, extensive investment schemes were under way at all Rover Group factories. The introduction of new technologies and preparations for the production of future models are intended to markedly increase the flexibility and efficiency of the production processes. In 1996, some DM1.2 billion were invested in fixed assets at Rover Group.

After the start-up of three new generations of cars at Longbridge in the previous year, investments focused on the Land Rover factory at Solihull in 1996. The most extensive single project was the construction of a new paint shop which was largely completed. The new facilities, with a total area of 16,000 sqm, will be put into operation mid-1997 after investment of more than DM300 million. They are equipped with the latest environmentally compatible technology for high-quality paints.

The company also invested in new paint shops for water-based paints at the Cowley plant near Oxford. The work began in August 1996. The total investment of around DM250 million is expected to increase plant capacity.

At Cowley, the new Vehicle Preparation Centre for large Rover cars was put into operation. It had been built with investments of around DM50 million within only nine months. The new centre brings together various functions under one roof and is equipped with state-of-the-art technology for optimum operation. The 130 or so staff were carefully prepared for their new tasks.

This investment is both an important step towards the further improvement of product quality and one of the cornerstones for the factory's new structures.

In 1996, the Land Rover plant at Solihull prepared for the production of a new model. The movements of a welding robot are computer-programmed exactly.

Stronger relationships with suppliers

In 1996, Rover Group introduced comprehensive programmes to improve its supplier base. Activities aimed primarily to prepare suppliers to meet the growing requirements of the BMW Group's international system of linked production plants. Use should be made of the specific advantages of the individual production plants within this international network.

Some of the activities focused on the reduction of the variety of parts and components which, in view of the total production volume of the BMW Group, could result in considerable cost savings.
A component management system should ensure optimum production and logistical structures. Systematic waste avoidance programmes were also continued.

Rover Group's purchasing teams initiated an environmental awareness programme for 450 key suppliers. This aims to eliminate the use of hazardous materials and processes.

Together with BMW's purchasing divisions, Rover Group continued to examine the possibilities of using the same parts and components for all group vehicles. Further costs could be saved through cooperation with the same suppliers. These activities concentrated on components which do not affect the product character of the BMW Group's various brands.

BMW AG

The working structures at the new Design and Engineering Centre created the conditions required for efficient team working at Rover and in the entire BMW Group. Emphasis was placed on the flexible use of personnel in the manufacturing process. The associates' mobility helps to safeguard jobs. Rover Group cooperates with many UK education centres in the field of training and education.

Rover Group workforce prepared to meet new challenges

At the end of 1996, Rover Group employed some 39,400 people, compared with 40,100 in the previous year. This development was mainly due to successful rationalisation programmes. Personnel capacity was adjusted during the course of natural fluctuation.

The associates' flexibility and willingness to change were essential for the introduction of new forms of cooperation in the company. These are particularly important at the company's Design and Engineering Centre at Gaydon.

Project work within the framework of the larger BMW Group, particularly with units at the BMW Research and Engineering Centre in Munich, present additional challenges for associates. The projects, which have now begun, suggest marked increases, in the medium term, in the efficiency of the Group's development and production processes. They will also safeguard employment.

A project group, comprising representatives of the company's management and workforce, conducted a worldwide study of practices and systems to ensure the efficient use of personnel. The project group was interested in the skills, working hours and mobility of personnel and in the possibilities of recruitment on short-term contracts and inter-plant mobility.

The findings provided an agenda for medium-term activities. The first results included factory agreements on the exchange of personnel between plants and the recruitment of personnel on short-term contracts. Measures of this kind should enable plants to cope more flexibly with fluctuations in personnel requirements.

Pay negotiations successfully concluded

During pay negotiations, company management and associate representatives agreed on a 3.5% increase in wages and salaries from November 1st 1996. Minor changes in company benefits were also negotiated. The agreement applies for one year.

The 1996 pay negotiations again demonstrated the close cooperation between the company and the trade unions. Rover has not had any significant labour disputes since 1984. The New Deal, which was introduced in 1992 and provides for both staff mobility and job security, has achieved a new dimension for industrial relations in the whole of British industry.

Targeted training and education

Rover Group provides its associates with a variety of learning opportunities. These are available both at Rover's own learning centres and in programmes offered in cooperation with universities. The company has long-standing relations with many UK education centres. In 1995, Rover initiated the world's first Master of Science Degree (MSc) Programme for Total Quality Management with the John Moores University, Liverpool.

Close cooperation continued with the Warwick Manufacturing Group. This institute is supported by the University of Warwick and leading British companies. In 1996, the first associates graduated with an engineering degree which Rover Group had developed jointly with the university.

This pioneering programme combines academic study with practical assignments in the workplace. It is a key tool for training highly-qualified personnel.

In 1996, a special programme coached managers in the promotion of teamwork within the international BMW Group. The company continued to participate actively in international learning activities, such as the European Lifelong Learning Initiative (ELLI). Rover also took part in the United Nations' educational activities as a member of the European Consortium of Learning Organisations (ECLO).

High level of employee involvement
Various activities and programmes encouraged employees to take part in the company's development. They included quality action teams, discussion groups and the company's suggestion scheme.

A revised form of the avidly used suggestion scheme was relaunched in March 1996 in order to promote and rapidly process ideas with high cost-saving potential.

New Rover Group headquarters in Warwick
Mid-year, some 200 staff from headquarters moved to new offices at the Warwick Technology Park, only 12km away from the Design and Engineering Centre at Gaydon. Rover's previous headquarters at Bickenhill near Birmingham became the base for Rover Group's commercial activities, formerly located at several different sites.

Workforce at End of Year	1996	1995
Rover Group	39,407	40,137
Small and medium-sized Rover cars	10,317	10,715
Large Rover cars	2,815	3,364
Land Rover vehicles	7,100	7,326
Engines	8,621	8,474
Pressings	4,799	4,763
Other areas, sales companies and investments	5,755	5,495

BMW AG

Aero Engines, Financial Services and Other Subsidiaries. **BMW has cooperated with Rolls-Royce plc. in the field of aeronautical engineering since 1990. In 1996, the BR710 was the first German aero engine to receive an international license for civilian aircraft. Financial services offer leasing and loan financing for cars and motorcycles worldwide. The additional activities for Rover Group also stimulated this field of business. The services and products of other subsidiaries complement BMW Group's activities.**

BMW AG

BMW Rolls-Royce Aero Engines	1996	1995
Sales in DM million	217	112
Employees at end of year	1,957	1,775
Result from ordinary business activities in DM million	– 627	– 652

The BMW Rolls-Royce BR710 aero engine received its international licenses. Thus, the four-year development history of the first German aero engine for civilian aircraft achieved an important goal. The engine will be used to power not only Gulfstream's and Bombardier's large business jets, but also the Royal Navy's Nimrod 2000 reconnaissance aircraft. The first aero engines from the Dahlewitz plant were delivered to Savannah, Georgia, for fitting into Gulfstream V executive aircraft. Bombardier's Global Express began flight trials.

International licenses for BR710 aero engine

In August 1996, the BMW Rolls-Royce BR710 aero engine with 15,000 pounds initial thrust received its first license from the European Joint Aviation Authority (JAA) on schedule. One month later, the Federal Aviation Administration (FAA) in the United States also issued its license certificate. Thus, the BR710 was the first German aero engine to receive international licenses for civilian aircraft.

The BR710 aero engine, like the entire BR700 engine family, is modular in structure. It comprises a fan with a diameter of 48 inches, a ten-stage compressor, an advanced ring combustion chamber and two-phase high- and low-pressure turbines.

This engine is currently considered the most environmentally compatible of its kind. Standards for exhaust and noise emissions are higher than those stipulated by the latest legislation. The engine's performance and, in particular, its low fuel consumption markedly exceeded the development engineers' expectations. By the end of 1996, the BR710 aero engine had completed successfully several thousand hours of operation on test beds and in flight trials.

During the test programme, more than 200 licensing tests were carried out and accepted by the aviation authorities. The engine recorded outstanding values during emission testing; the 150-hour endurance test was completed successfully. The BR710 aero engine also achieved excellent results during numerous other tests, such as the fan blade-off test, in which a fan blade is blasted off under starting conditions.

The assembly of the first aero engines for customers began in August 1996. This was also the start of series production for the 1,000 or so employees of BMW Rolls-Royce GmbH at Dahlewitz. Located near Berlin, the Dahlewitz plant with its international workforce, has established itself as a centre for the development and manufacture of high-tech products.

BR710 aero engines for Nimrod 2000

From the beginning of the next decade, BR710 aero engines will also be used to power the Royal Navy's four-engined Nimrod 2000 reconnaissance aircraft. This is the third type of aircraft to be equipped with the new BMW Rolls-Royce engine.

The refit with new engine systems is part of the modernisation programme for 21 aircraft of the Nimrod fleet. The order for 84 aero engines includes technical adjustments to the aero engines which have already been developed. Highly qualified jobs are being safeguarded in the German and British aviation industry by sharing development and production between BMW Rolls-Royce and Rolls-Royce MAEL (Military Aero Engines Ltd.).

The first flight trials with the modernised Nimrod 2000 are scheduled for 1999. The new engines will be delivered from 2002 to 2007.

Bombardier's Global Express makes a successful maiden flight

In October 1996, Bombardier's long-haul executive aircraft, Global Express, made its maiden flight from de Havilland Airport in Toronto, Canada. During the flight, lasting almost three hours, the aircraft reached an altitude of 11,000 feet (3,353m) and a speed of 210 knots (389kph). This was a successful start to a test programme lasting 18 months and 2,000 flying hours.

With the two BR710 aero engines, Global Express, like Gulfstream V, will have a range of 6,500 nautical miles (12,000km). With the most modern aerodynamics and the engines' economical fuel consumption, the aircraft will be able to fly non-stop, for example, from New York to Tokyo. As a result of the combination of state-of-the-art aircraft and engine technology, these new aircraft also set new standards for noise and exhaust emissions.

BR715 aero engine before first run

The larger BR715 aero engine also has economical fuel consumption and low noise and exhaust emissions. The required initial thrust of 21,000 pounds is achieved mainly by the fan, which has been enlarged to 58 inches, with a two-phase booster and a three-phase low-pressure turbine. In 1996, the first parts and components were made for the beginning of the test runs.

The BR715 aero engines are scheduled for McDonnell Douglas' new MD-95-30 regional jet. The merger of Boeing and McDonnell Douglas into the world's largest manufacturer in the aerospace industry will open up additional sales opportunities for the new aero engine.

Involvement in China

In November, during the China 1996 International Aviation and Aerospace Exhibition at Zhuhai in the Province of Guangdong in southern China, BMW Rolls-Royce concluded several agreements on long-term cooperation with the Aviation Industries of China (AVIC).

Several research and development programmes are to be carried out with AVIC institutes and Chinese universities. The agreements include provisions which will enable Chinese aeronautical engineers to work at the development centre of BMW Rolls-Royce at Dahlewitz near Berlin.

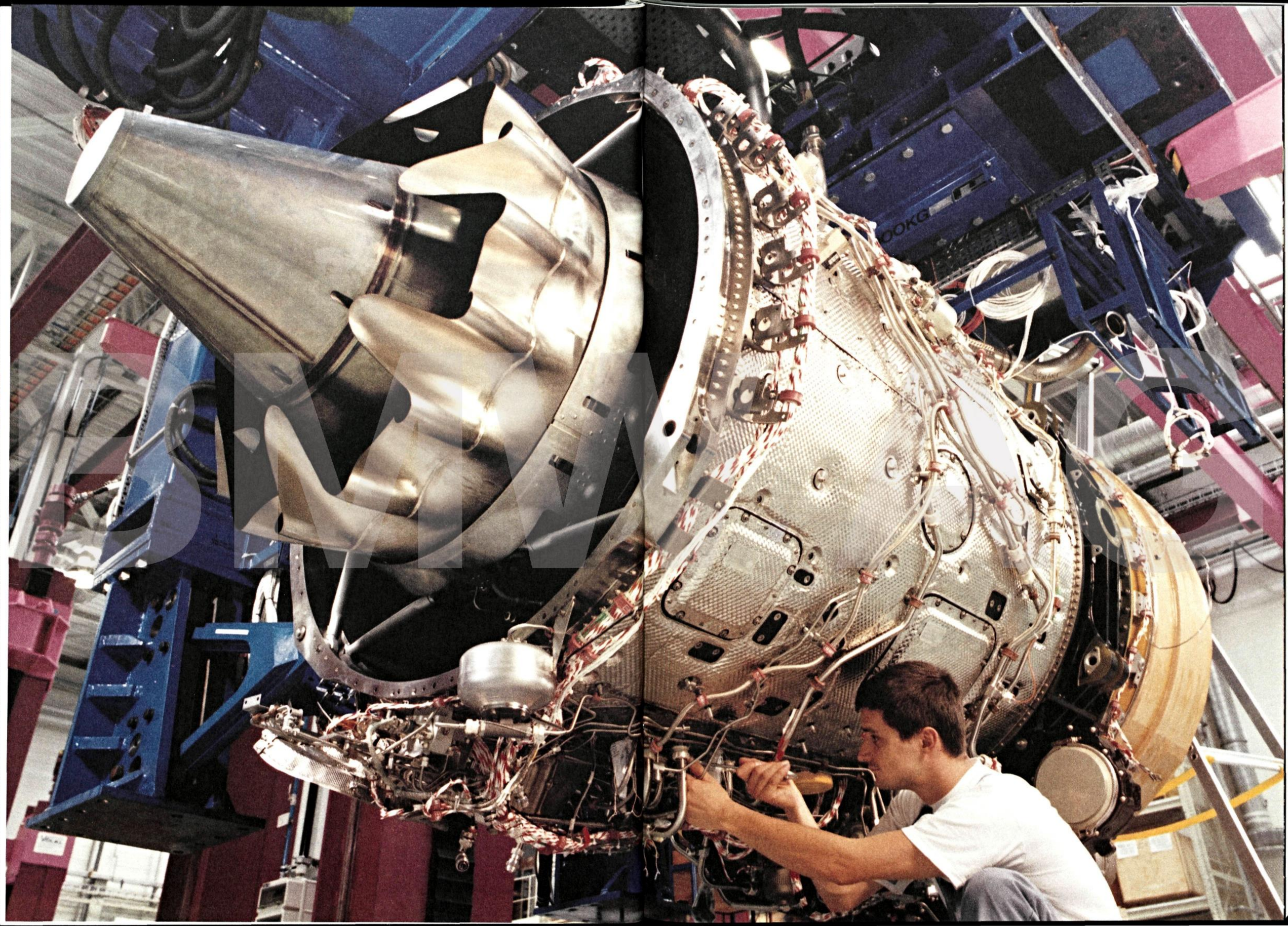
A joint, long-term research programme was also agreed with the Beijing University of Aeronautics and Astronautics (BUAA).

The engineers of BMW Rolls-Royce have already begun studies for a version of the BR700 engine family which could, in future, power China's planned AE100 regional jet. The BR715-56 fulfils ideally the requirements of this short- and medium-haul jet. Fundamental decisions on the AE100 project are expected to be made in 1997.

FAA license for small power unit RE220

In 1996, the auxiliary power unit APU RE220, developed jointly by AlliedSignal and BMW Rolls-Royce, received its license from the Federal Aviation Administration. In future, this small power unit will supply executive aircraft and regional jets with electric power when on the ground and safeguard the energy supply for certain on-board functions during the flight.

A BR710 aero engine is prepared for the next trial run at the Dahlewitz plant of BMW Rolls-Royce GmbH. In the summer of 1996, all the necessary safety and endurance tests were completed successfully.



Financial Services	1996	1995
Total contracts in thousands	665	577
New financing contracts in thousands	627	545
Sales from leasing in DM billion	6.3	5.2
Employees at end of year	1,051	901
Result from ordinary business activities in DM million	26	– 102

BMW Group's financial services continued to achieve above-average growth rates in 1996. The financing volume increased to DM21 billion. The range of services for Rover Group customers and dealers continued to be developed. Germany, the United States and Japan are the largest markets for the BMW Group's financial services.

Individual financing through BMW group companies

BMW financial services supported the Group's sales of cars and motorcycles with a wide range of leasing and loan financing in 15 countries.

Tailor-made financing, from classic financing in instalments to full-service leasing, have become increasingly important. Therefore, in 1996, the structures and sequences of the financial services were adapted to customers' increased requirements. Earning power continued to improve in this field of business.

The volume of financing increased by 9% to DM21 billion in an extremely competitive environment. Financial services for Rover Group trebled, although they were still at a low level, accounting for 7% of the total business volume.

Germany and the United States accounted for 70% of all BMW Group's financial services. The largest increases were also recorded in these markets. The other European countries accounted for an increased share of 15%, and Japan, Australia, New Zealand and South Africa for the remaining 15%.

Above-average growth of new contracts

In 1996, group companies concluded, for the first time, more than 600,000 new leasing and loan contracts for BMW and Rover Group vehicles. The number of new contracts increased by 15% to 627,000. Most of the contracts were concluded with dealers and customers for financing new and used cars. In customer financing, the number of new contracts rose to more than 310,000.

In the markets in which BMW is represented by its own financing companies, almost every third BMW customer financed their BMW car through a group company; at Rover every sixth customer financed a vehicle in this way.

Overseas companies catch up

In 1996, the overseas financing volume almost achieved the level of the European markets. Germany remained the most important single market with 230,000 new contracts with dealers and customers.

With market penetration of almost 30%, which is already high for Germany, the financing volume increased by a further 6% to DM9.0 billion. BMW Bank GmbH, Munich, has served the market successfully for 25 years.

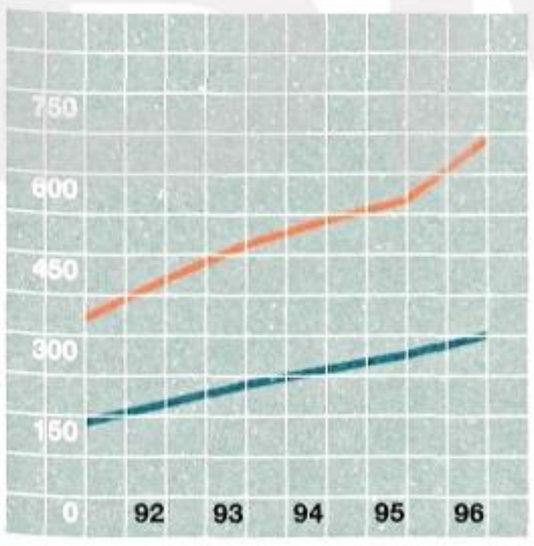
In the other European markets, the number of new contracts increased by a total of 23% to more than 160,000, mainly due to the particularly satisfactory development in Italy.

Outside Europe, new business grew by 12% to 234,000 contracts. BMW Financial Services NA, Inc. in the United States again accounted for the largest share with 145,000 contracts. In September 1996, the company moved into a new service centre in Dublin, Ohio. From there, customers and dealers throughout North America are served both quickly and efficiently.

Network of financial services developed worlwide

Group companies offer financial services for BMW cars and motorcycles in 15 markets. These services are now available for Rover Group vehicles in 12 countries. In 1996, a financial services company for BMW and Rover Group products was opened in Spain.

In 1996, structural measures continued to focus on the development of the Group's own financial services organisation for Rover Group customers and dealers. Further programmes were developed and introduced for Rover Group on the basis of the existing systems and structures for the BMW marque. They are offered by Rover Group's sales organisation and handled by BMW Group's financial services.



Total Contracts of BMW Financial Services
in thousands

The new services were very well received in the markets.

At the end of 1996, group financial services were available for Rover in six countries in continental Europe and in North America, Japan, Australia, New Zealand and South Africa. In Great Britain, a joint venture company in which Rover Group has an interest of 49.9% offers financial services.

Having largely completed the establishment of a financial services organisation in the markets of Europe, North America and Japan, further cooperation projects were launched with local financial institutions in Asia, South America and Eastern Europe.

Risk management

The risk of loan losses is minimised by consistent credit assessment. Nevertheless, adequate loan loss provisions are made.

BMW makes great efforts to safeguard the value of the used vehicles. Thus, at the end of the contract's term, financed vehicles are sold through BMW Group's international dealer organisation, taking account of the market's specific conditions.

The BMW group financing companies arranged refinancing of the leasing and loan business directly through the capital markets. BMW pursues a policy of matching maturities for customer financing and its own refinancing in order to exclude, as far as possible, risks arising from changes in interest rates.

Favourable outlook continues for financial services

With attractive financial products and individual services, financial services will continue to make an important contribution to the entire Group's success.

The additional activities for Rover Group, in particular, are expected to stimulate further growth in the volume of financing and number of contracts.

In financial services, BMW is prepared to use the opportunities of a single European market to standardise handling, risk and control systems. This should not only increase volume, but also improve cost structures in this field of business.

International projects gained in importance at softlab and Kontron. BETEK carried out construction projects for BMW and clients outside the Group. Bavaria Wirtschaftsagentur has existed for 25 years.

Bavaria Wirtschaftsagentur GmbH, Munich

Bavaria Wirtschaftsagentur arranges insurance worldwide for the BMW Group. It helps the group companies to determine insurance risks and arranges the necessary insurance with companies at home and abroad.

The company offers insurance for the car and motorcycle business on behalf of the financial services. Insurance is also arranged for customers and employees of the BMW Group and for other corporate clients.

Bavaria Insurance Company Ltd. and BL Reinsurance Company Ltd., both based in Dublin, Ireland, provide mainly reinsurance for risks arising in all fields of business. Bavaria Insurance Brokers Ltd., also based in Dublin, arranges insurance and provides associated services.

Bavaria-Lloyd Reisebüro GmbH, Munich, in which the Bavaria Wirtschaftsagentur holds a 51% interest, offers tourist services, organises events and arranges business trips for BMW employees.

In 1996, Bavaria Wirtschaftsagentur and its subsidiaries employed some 90 people.

A new building of the Faculty of Mechanical Engineering of the Technische Universitat Munchen at Garching; BETEK Bau- und Energietechnik GmbH, a BMW Group company, was project coordinator. After three years of construction, the buildings will be handed over to the Free State of Bavaria in 1997.

BETEK Bau- und Energietechnik GmbH, Munich

The company plans and coordinates construction projects for the BMW Group and clients outside the Group. BETEK, with its special focus on industrial and administrative construction, employs 160 people, most of whom are architects and engineers.

In 1996, activities centred on the development of the BMW industrial park at Wackersdorf. There, after only six months of construction, the first production hall was completed for the centre of competence for car interiors.

The new buildings of Technische Universität München in Garching, for which BETEK was project coordinator, were continued on schedule and in accordance with cost planning. The Faculty of Mechanical Engineering will begin to hold lectures there in the summer semester of 1997.

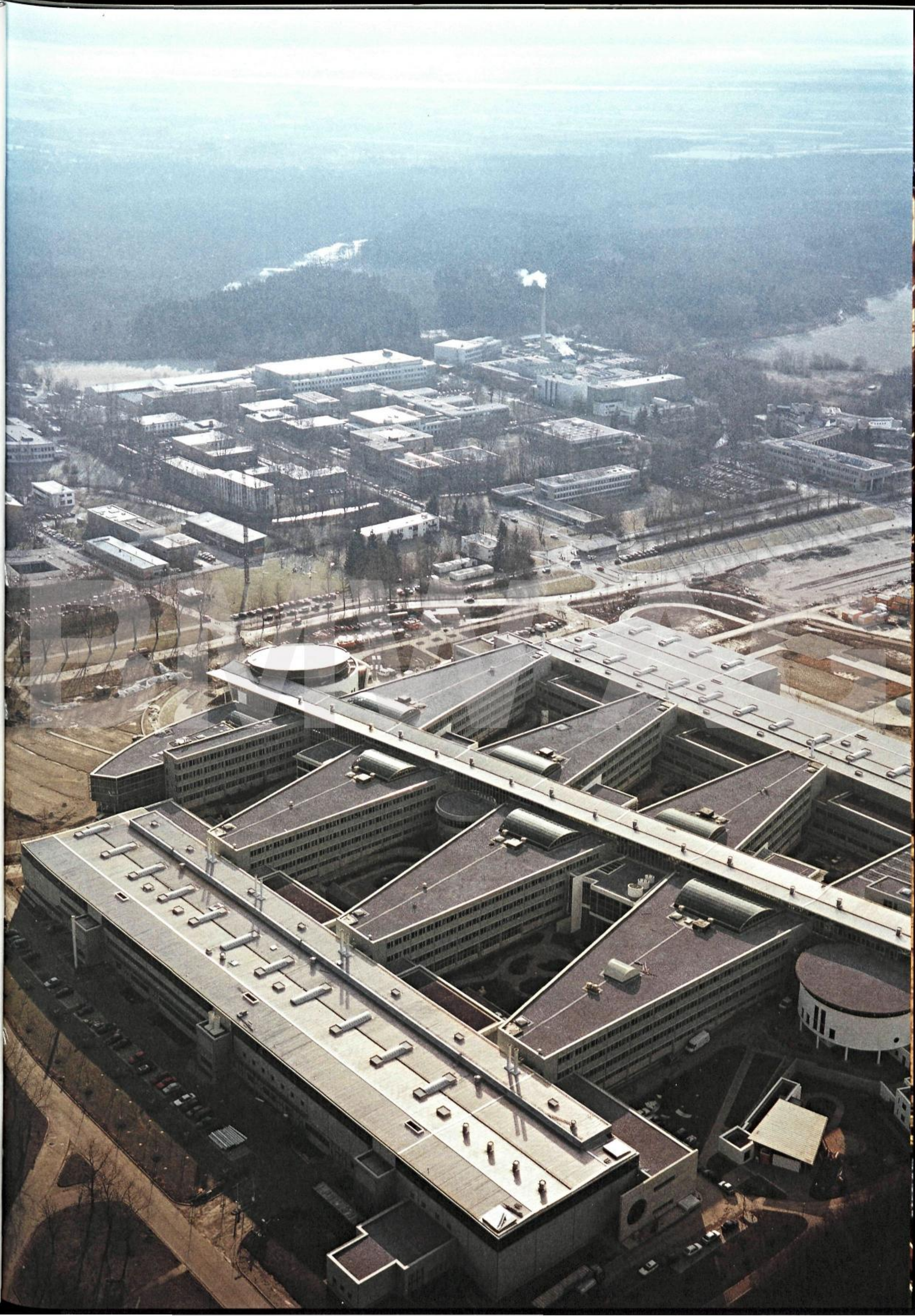
BETEK coordinated further construction projects at the BMW plant at Regensburg. At the end of the year, the enlargement of the body shell hall progressed to the installation of production facilities.

BETEK is also planning and coordinating the construction of the new pressing shop at the Regensburg plant. The new 9,000sqm hall for large transfer lines will be put into operation in 1997.

The BMW sales outlet in Stuttgart also used the services of the Group's own construction specialists for the new building of a branch office.

Business with clients outside the Group continued to grow. Construction and energy projects were planned for MAN B&W Diesel AG, Augsburg public utilities, Steinbock Boss GmbH and the Association of the Bavarian Metal and Electrical Engineering Industry.

The power supplier Ostbayern AG (OBAG) in Regensburg commissioned BETEK with general planning for the construction of a turnkey heat cogeneration plant.



softlab GmbH für Systementwicklung und EDV-Anwendung, Munich

During the course of 25 years, softlab has become an important software and systems company in the international market. Today, the company has subsidiaries in Europe, the United States and Japan.

softlab advises its large corporate clients in banking, insurance, industry and telecommunications on the suitable choice and use of the most modern technologies and products.

In 1996, softlab laid the groundwork for opening up new markets. In the product business, the company continued to develop its core technologies and thus attracted new clients. In addition, the range of services for the integration of systems was extended to include, for example, new solutions for converting currencies into the euro and for adjusting data systems to the next millennium.

The company's SAP solutions, particularly for the car industry, were also enhanced. The company's various fields of business were marked by steady growth. At the end of 1996, softlab had around 900 employees worldwide.

Kontron Elektronik GmbH, Eching

The company develops and sells worldwide computer-assisted products and services for industry and research. It uses the latest technologies in order to meet requirements in different sectors.

The company's product range includes portable and stationary industrial computers, programs and equipment for image and material analysis, digital cameras and digitisers for computer-aided design and construction.

Kontron Elektronik's clients include the automobile, telecommunications, industrial and consumer electronics, medical technology, microscopy, automation and safety technology industries. The company developed its international project business.

In 1996, the company introduced several products, such as software for three-dimensional microscopic image processing. In addition, a new generation of software was launched for industrial image processing. At Photokina 1996, Kontron presented a new digital camera which, for the first time, combines different photographic technologies.

Software tools to test programs stored on microchips are also new on the market.

With around 400 employees, the workforce remained at the previous year's level.

BMW and Electronics – Progress in Automobile Technology

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B M W

In computers, signs and symbols are represented by a binary system of notation which uses the digits 0 and 1, corresponding with "off" and "on" conditions in the electric circuit. The allocation is determined by the 7 BIT ASCII code (American Standard Code for Information Interchange).

Glossary

analogue (Greek: similar, corresponding), an analogue quantity can vary between certain limits. In the analogue computer, mathematical quantities are translated continuously into physical values, such as voltage or revolutions. An analogue model represents the original terms of reference.The result is read as a physically measurable quantity.

binary, a number system based on two digits, 0 and 1.

bit, binary digit, the smallest unit of information in binary notation.

George Boole, 1815-1864, a British mathematician who devised mathematical logic. His algebra, now known as Boolean algebra, forms the basis of modern digital computer design.

bus system, a system of data connections between different parts of an electronic system. In the car, it replaces the traditional cable harness, providing a data highway between sensors, control and consumer (eg, windscreen wipers).

chip or microchip, a very small crystal of a semiconducting material, eg, silicon, often with thousands of switch elements and circuits.

digital (Latin: with a finger or digit, represented by signs), a change in quantities in stages, represented by figures. Digital computers use discrete binary notation of 0 and 1 to represent the real world. Calculations are performed through numerical operations; the result is a number.

electronics, technologies which study the movement of electrons and their use. They resulted, inter alia, in the discovery of the transistor (1949), the integrated circuit (1958) and the microprocessor (1969). Today, the term refers mainly to circuit technology using electronic components.

semiconductor, a crystalline material whose electrical conductivity is intermediate between that of a conductor and an insulator. Chemical processes can be used to design the material to transmit and control electricity. Semiconducting materials are used for electronic components, such as diodes, transistors and chips.

integrated circuit (IC), electronic components, such as resistors, capacitors, diodes and transistors, assembled in a single semiconductor crystal for a logical overall function.

microprocessor, a computer whose central processing unit consists of an IC. It can be supported by additional elements, such as memory, memory organisation and peripheral in- and output devices.

telematics, from telecommunications and informatics, describes the long-distance transmission of computer data.

transistor, a semiconductor component which can amplify electric current and voltage.Transistors can also switch current off and on and thus represent the digits 0 and 1.

BMW AG

BMW and Electronics – Progress in Automobile Technology. Electronics make life easier. Mechanical functions are being extended or replaced by electronic ones. New opportunities are being developed. The change is gradual and often goes unnoticed.

The mechanical adding machine has long been replaced by an electronic calculator which is handier and more efficient. Instead of the usual analogue telephone, we increasingly use mobile, digital phones for easier communications. Microprocessors are also responsible for advances both in cars and traffic guidance.

Whether at home or on the move, at work or at play, electronics have become part of our lives. With this technology, scientists and engineers were, for the first time, able to carry out precise measurements and controls. Thus, it has also helped to increase safety, economic efficiency, comfort and convenience.

Modern technologies and electronics, in particular, relieve man of heavy, dangerous and monotonous work. They open up new scope for creativity and help to reconcile the needs of man with those of environmental protection.

The BMW Group also uses electronics in this way: for the development, production and use of its products. In so doing, it aims to safeguard individual mobility.

BMW AG

From bar-code to satellite navigation

Man sees the world as a cohesive, analogue whole and thus very differently from the digital computer. The latter represents the world in countable binary digits, 0 and 1.The advantage: digital information can be processed, linked and transmitted, irrespective of its origin and content.

Sensors collect analogue data; analogue/digital converters translate them into the digital language of the computer. Thus, the microprocessor can process equally temperatures, telephone conversations, images or texts. Information of differing qualities can be integrated, and man can intervene actively in the process.The scope of functions can be increased. Digital data can be stored easily and in increasing density. Multi-volume encyclopaedia take up only a couple of CD-ROM.

These advantages are the result of the rapid development and huge reduction in prices of electronic components.The technology that is now used worldwide is based on silicon, the second most abundant element in the earth's crust. It all began with the transistor in 1949.This device can amplify current and voltage and simply switch circuits on or off. Current is divided between flows of energy and information.

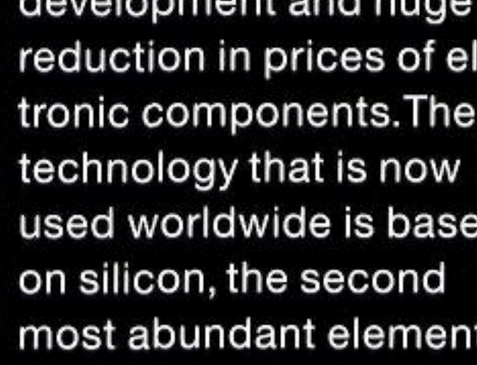
The linking of "off"and "on", 0 and 1, for complex computing operations follows the logic of Boolean algebra, already developed in the last century.

Miniaturisation and the increasing integration of electronic components for functional units resulted, in 1958, in the first integrated circuit and, in 1969, in the first microprocessor, the Intel 4004. Digital control systems can now perform increasingly complicated functions.The trend towards increasing efficiency continues.

Today computers are linked with one another via telecommunications. Worldwide links via satellite and glass-fibre cables make information, knowledge and processes accessible almost all over the world.

Close intercontinental cooperation is now possible; information on global developments can be obtained in real time and on-line.

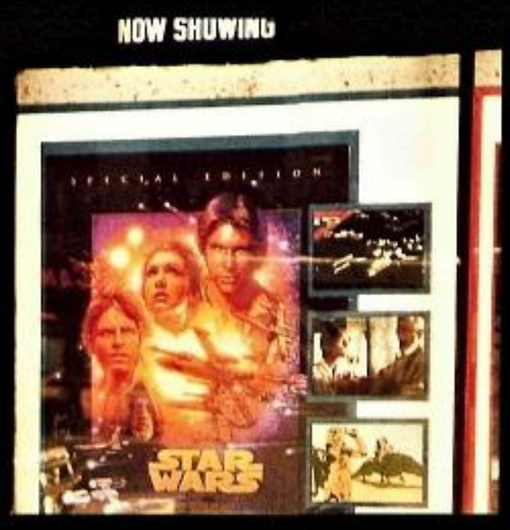
The examples show that electronics have become part of our daily lives.



Mobile phone. Mobile communications since 1918. Digital transmission technology has resulted in a world-embracing system.The digital **G**lobal **S**ystem for **M**obile Communications (GSM) already functions across frontiers in many countries.
Robot 1963. Since Unimat, the first commercial industrial robot, programmable machines of this kind have been used successfully for many work sequences.

Bar-code 1973. A series of lines and spaces contains important product information in machine-readable form. Bar-codes are used to optimise logistics and speed up check-out procedures.
Compact disc 1981. Audio information is recorded digitally as a pattern on a plastic disc. Digital recordings are more than twice as dynamic as their analogue predecessors.

Keypad phone 1962.The traditional dial of the US standard telephone (Lucent Technologies) was replaced by a keypad for simpler operation.
Phonecard 1987. Instead of the bother of small change, a money value can be stored as credit in a chip for debiting as required.



Remote control key 1983.The integrated microprocessor is responsible not only for opening and closing functions, but also for operating the theft-proof electronic immobiliser.
Film. Today's computer-generated film effects have become so realistic that viewers can hardly tell the difference between reality and fiction.

Illustrations:
Transistor from "The Electronics Epoch"/Elisabeth Antébi/Birkhäuser, 1983/Basle, Boston, Stuttgart.
Glass fibres by A. Hart Davies/Fokus Presseagentur/Hamburg.

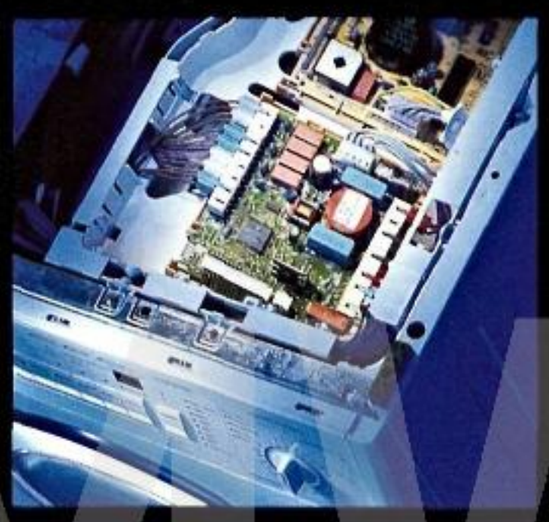
PWA

Video games 1972. Complex games of skill and strategy have replaced the simple and often pure "text adventures" of the early days of the computer. Simulation has become increasingly sophisticated and realistic.
Nuclear spin tomography 1982. The computer makes a 3D image of the body from the magnetic properties of the human organism.

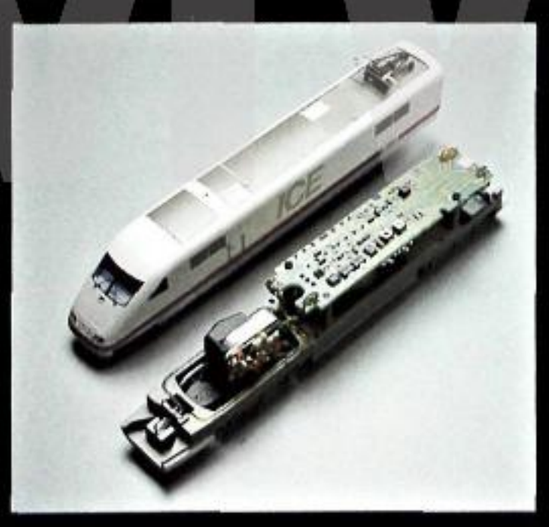
Digital Camcorder. This was a major advance for professional reporters when, in 1980, it first combined a portable video camera and recorder. As a result of digital electronics, today's handy equipment offers amateurs a large range of functions.
Washing machine. Electronic controls have made household appliances easier to use and reduced energy consumption.

Digital thermometer. An exact measurement is obtained in only a few seconds. In addition, the last value is stored, permitting direct comparison.
Weather flight 1995. Today, computer-calculated programs permit accurate weather forecasts for a period of 8 days. Digital images convey vividly the dynamic behaviour of the weather.
© HR/ARD-Tagesthemen

Message pad 1993. It recognises handwriting, print and symbols, and offers intelligent assistance with recurrent activities, such as appointment planning or communications.
Personal computer 1977. Symbol of the information age. Hardly any other piece of equipment has changed daily life as much as the PC.



Automated Teller Machine (ATM) 1968. These machines dispense cash and carry out banking transactions independently of public opening hours. A digital PIN has to be keyed in as a security measure.
Quartz watch. The principle of extremely accurate time measurement has been known since 1929, but it only became available for wristwatches with the miniaturisation of electronic components.



Electronically controlled locomotive 1984. Integrated digital control permits highly realistic rail traffic.
Avionics (aviation electronics). Computer-assisted navigation, systems control and fly-by-wire simplify aircraft control, increase safety and help to reduce fuel consumption.

TV remote controls. As a result of integrated electronics, almost all functions can be triggered with a remotely controlled hand unit.
Digital display. Digital generation on a display unit of simple electro-optical elements, such as light-emitting diodes, to show text, symbols and images.

Internet 1969. Originally conceived as the US military's communications network, it is now a rapidly growing world of information for everyone.
Navigation system 1993. The signals of the 24 geostationary satellites of the Global Positioning System, GPS, are used for safe navigation in the civilian sector.

Benefits of technology. Electronics is one of the key technologies of modern society. Its potential should be used intelligently and responsibly. BMW shapes and advances this process, setting standards for its use in car-making and traffic technology. The real challenge lies in suitable selection and simplification because the technology's "limits" are set primarily by its endless potential.

Benefit for the customer is the overriding criterion when developing and producing BMW cars. The careful use of natural resources, minimum impact on the environment, and protection of other road users provide the general background for innovation. The BMW Group always uses state-of-the-art technology in products and processes. In future, their quality will depend even more on the level of system integration.

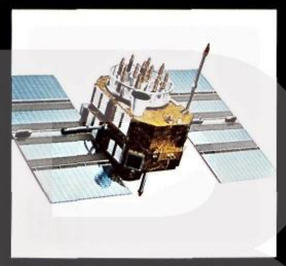
With BMW know-how, the most efficient products and services can be used simply and safely. The integration of electronics gives us additional opportunities to find solutions and advance technical progress for mankind.

Made by BMW

World

A system of interlinked networks – from the universe to the microstructure of modern chips – brings progress to the car, company and traffic control. Telematics, the linking of telecommunications and informatics, opens up new and sometimes undreamed-of possibilities.

The near-earth space is also becoming increasingly important for car drivers. For example, the satellite-assisted Global Positioning System (GPS) has completely changed the possibilities of orientation. While travellers used to determine their position with sextant and chronometer, they can now rely on radio signals. The car is developing from an isolated mobility system to an information exchange point.



Satellite of the Global Positioning System The signals of three of the 24 geostationary satellites suffice for exact positioning.

Test drive in Death Valley BMW test drivers exchange measured data, via satellite, with the Munich research centre.

BMW uses telematics for designing efficient traffic systems and linked processes within the Group. A worldwide corporate network links the headquarters in Munich with its production plants, companies and mobile teams on five continents. Suppliers, dealers and other business partners are also connected.

Without these structures, the car plants in the United States and South Africa or the planned engine plant in Latin America could not be integrated into the Group's system of linked plants and facilities; cooperation with Rover Group would remain fragmentary.

Region
Greater Munich: 2.4 million people who live, learn and work in a radius of 50km; a business community with international activities which produces goods and services for more than DM160 billion a year. Anyone wishing to preserve the vitality of such regions must encourage an intensive exchange between the centre and its surroundings.

Traffic guidance centre
The traffic in the north of Munich is monitored constantly and guided by overhead warning signs.

On-board monitor in the BMW cockpit
The navigation system CARIN guides the driver precisely and safely to his destination.

As early as 1989, BMW took the initiative to develop a Cooperative Traffic Management System in the north of Munich. Since then, overall traffic guidance has greatly improved the traffic situation and helped to ease the burden on the environment. Despite the growing volume of traffic, the number of accidents decreased by 40%. The length and frequency of the traffic hold-ups were noticeably reduced.

Soon, an extended digital traffic radio service will make it possible to include the current traffic situation in route planning with GPS so that the driver can avoid hold-ups and roadworks on the way to his destination.

Communications systems for overall process control have long proved successful in BMW Group's plant and sales logistics. The ability to transport materials, vehicles and employees more flexibly and more economically has become an important factor in competition.

Place
Systems for communications from vehicle to vehicle or to the infrastructure can make our road network safer. COMPANION is a warning and information system developed by BMW. Drivers are warned by light signals from roadside beacons of traffic hold-ups, roadworks and fog-banks ahead.

The intelligent road will remain utopia in the foreseeable future. Therefore, BMW is working on the intelligent car. The principles are own responsibility and assistance.

Anti-lock braking and traction systems already assist the driver when braking and accelerating, servotronic aids steering, and cruise control maintains a constant speed. Adaptive automatic transmission even takes account of the driver's usual choice of gear, and Park Distance Control helps the driver to park between two cars.

These systems should relieve the pressure on the driver, and help him to avoid errors and concentrate on the road.

COMPANION test track
BMW is testing a new local warning system on 9km of motorway near Munich Airport.

Anti-lock braking sensor of the K 1200 RS
A sensor controls the front wheel and triggers the anti-lock braking system, when required.

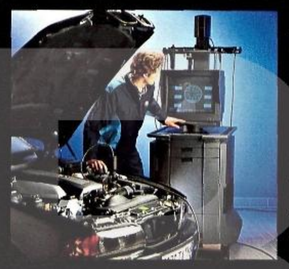
The principle of own responsibility also applies to development and production in the BMW Group. Computers and robots have permitted particularly efficient methods of working, but the level of innovation and quality of the cars are still determined by the knowledge and skills of the employees.

Object

Electronics has brought fundamental changes to car-making. Without it, the immense progress made in safety standards, emission levels, comfort and communications would barely have been conceivable. Computers and telecommunications also play an increasingly important role in car and customer service.

BMW opted for electronics at an early date. In 1979, the 732i BMW was the first series-produced car to have digital engine electronics.

As the use of electronic systems and sensors increased, so did the requirements of data transmission. New on-board networks with "bus systems" increasingly replace the cable harnesses of the past. As a result, the number of cable connections has been reduced by one-quarter, and the reliability and function of the entire system have improved.

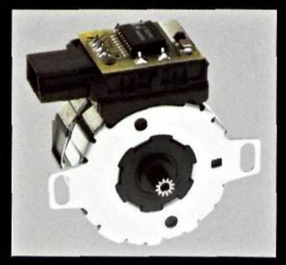


BMW service tester The BMW diagnosis and information system saves time and makes car maintenance easier.

Crash simulation Today, crash tests are first carried out in a supercomputer. This permits various tests.

Outstanding products are the result of outstanding development sequences. Here too, the volume of data for processing is growing. Sequences are increasingly being linked. They are developed parallel to one another and thus more quickly and economically. Computer simulation of products and processes has become the modern BMW development concept.

Technology
Electronics for cars began with simple functions, such as the indicator. Meanwhile, microprocessors control a variety of drive, chassis and suspension, and body shell functions. The engine electronics in BMW cars now have the computing capabilities of a super-computer in the 1960s.



Mechatronics
A stepper motor with integrated sensor and control electronics operates the air jets of the automatic air-conditioning.

Rain sensor
The wiper control regulates the wiper depending on the amount of rainfall.

New functions evolved by linking previously separate systems. Thus, traction control affects equally engine, brakes and transmission. Increasing numbers of mechanical components are electronically controlled. More than 100 control units are installed in the new 7 Series cars.

BMW not only links systems, but also decentralises electronics. Electronic controls are now so small and robust that they can be integrated directly into mechanical components; many plug and socket connections are no longer required. Mechatronics, the symbiosis of mechanical and electronic devices, thus opens up scope for new, efficient functions which can be realised reliably and economically in compact form.

At BMW, interdisciplinary project teams, formed flexibly by employees from the divisions and system suppliers concerned, work on the development of integrated components of this kind.

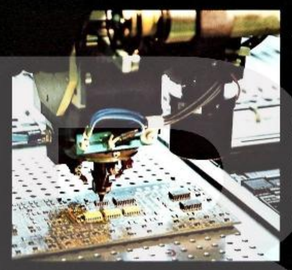
BMW AG

Modules

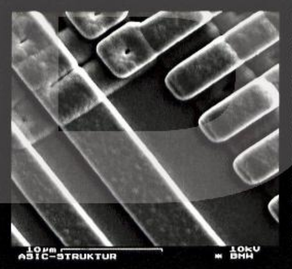
At the level of the chip structures where everything is tiny, the development towards increasingly fast, efficient and reliable computers is becoming more dynamic than ever, advancing changes in technology, industry and society.

New technologies require additional qualifications. This applies, in particular, to the car industry which, like hardly any other civilian industry, links the most varied scientific and technical disciplines. Therefore, BMW has had its own electronics laboratory since 1989.

While the hardware of the chips defines the electronic capabilities, the program codes of the software



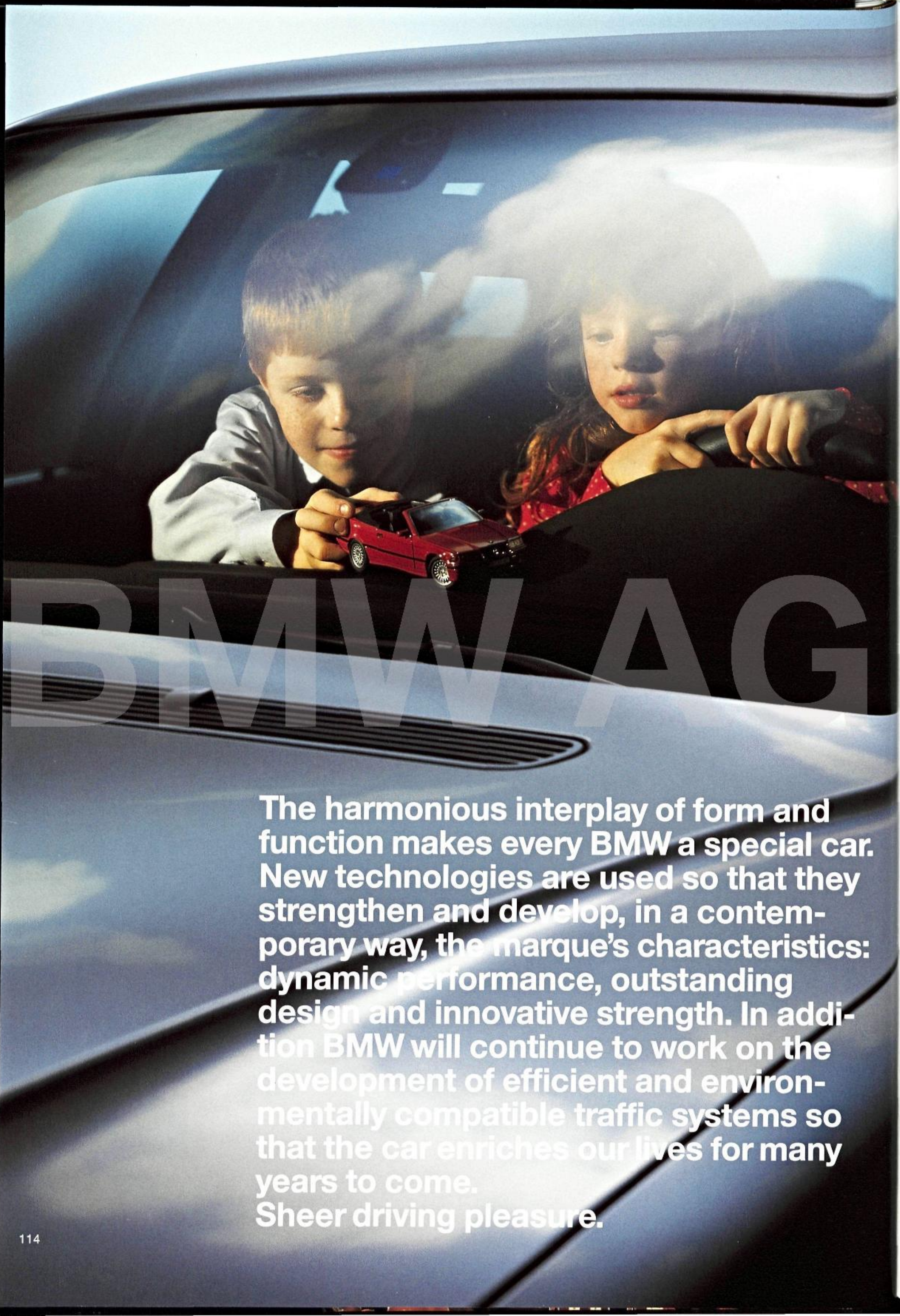
BMW electronics laboratory Electronic circuits and prototypes are developed in the BMW electronics laboratory.



Chip structure magnified 3000 times During quality control, IC structures are examined by a scanning electron microscope.

contain the expertise of the engineers, whether for the gearshift mechanism of a transmission, the coordination of chassis and suspension, or climate control.

The efficiency and reliability of the software have become quality criteria, like the rigidity of the body. Electronics is also tested thoroughly from the earliest stages of development. It has to prove its worth during millions of test kilometres in heat and ice before it is accepted for use in series production.



The harmonious interplay of form and function makes every BMW a special car. New technologies are used so that they strengthen and develop, in a contemporary way, the marque's characteristics: dynamic performance, outstanding design and innovative strength. In addition BMW will continue to work on the development of efficient and environmentally compatible traffic systems so that the car enriches our lives for many years to come.
Sheer driving pleasure.

BMW Consolidated Financial Statements

BMW AG

BMW Consolidated Balance Sheet
at December 31st 1996
(in millions of DM)

Assets	Notes	31.12.1996 DM million	31.12.1995 DM million
Intangible assets	(6)	464	358
Tangible assets		12,376	11,093
Financial assets	(7)	589	454
Fixed assets		**13,429**	**11,905**
Inventories	(8)	5,340	5,183
Leased products		8,921	7,782
Receivables from sales financing		7,877	7,226
Assets from sales financing	(9)	16,798	15,008
Trade receivables	(10)	3,245	2,573
Other receivables and miscellaneous assets	(10)	1,812	1,253
Marketable securities and notes	(11)	1,335	1,474
Liquid funds	(12)	2,698	2,880
Current assets		**31,228**	**28,371**
Prepaid expenses and deferred taxes	(13)	**685**	**571**
		45,342	**40,847**

Shareholders' equity and liabilities	Notes	31.12.1996 DM million	31.12.1995 DM million
Subscribed capital	(14)	989	987
Capital reserve	(14)	1,614	1,593
Revenue reserves	(15)	6,043	5,227
Unappropriated profit available for distribution		297	267
Minority interest	(16)	124	126
Shareholders' equity	(17)	**9,067**	**8,200**
Registered profit-sharing certificates		**77**	**79**
Pension provisions		2,279	2,009
Other provisions and accruals		8,593	7,599
Provisions and accruals	(18)	**10,872**	**9,608**
Bonds		1,633	2,791
Liabilities to banks		1,745	1,404
Trade payables		3,014	2,513
Other liabilities		3,872	2,781
Liabilities	(19)	**10,264**	**9,489**
Liabilities from sales financing		12,977	11,268
Deferred income from lease financing		1,894	2,031
Liabilities from sales financing	(20)	**14,871**	**13,299**
Deferred income		**191**	**172**
		45,342	**40,847**

BMW Consolidated Income Statement

for the financial year ended December 31st 1996
(in millions of DM)

	Notes	1996 DM million	1995 DM million
Net sales	(21)	**52,265**	**46,144**
Increase in product inventories and own work capitalised	(22)	696	1,189
Total value of production		**52,961**	**47,333**
Other operating income	(23)	2,078	1,814
Material costs	(24)	31,057	27,397
Personnel costs	(25)	9,844	8,846
Depreciation on intangible and tangible fixed assets	(26)	3,002	2,877
Other operating expenses	(27)	9,248	8,444
Net income from investments	(28)	69	91
Net interest income	(29)	204	220
Interest expense from lease financing	(30)	501	527
Result from ordinary business activities		1,660	1,367
Taxes on income	(31)	714	537
Other taxes		126	138
Net income	(32)	**820**	**692**

BMW AG

	Acquisition and manufacturing costs					
	1.1.1996	Translation difference	Additions	Reclassifications	Disposals	31.12.1996
	DM million	DM million	DM million	DM million	DM million	DM million
Intangible assets	1,035	31	307	2	38	1,337
Land, titles to land, and buildings, including buildings on third-party land	7,223	341	336	103	58	7,945
Technical plant and machinery	21,257	1,002	1,974	300	1,428	23,105
Other plant, factory and office equipment	2,771	145	508	40	264	3,200
Advance payments and construction in progress	1,134	119	705	– 445	22	1,491
Tangible assets	32,385	1,607	3,523	– 2	1,772	35,741
Shares in subsidiaries	40	3	25	–	10	58
Loans to subsidiaries	5	–	–	–	–	5
Investment in associated companies	261	37	51	–	–	349
Investment in other companies	10	–	–	–	–	10
Long-term securities	11	–	8	–	–	19
Other long-term loans receivable	145	8	41	–	23	171
Financial assets	472	48	125	–	33	612
Fixed assets	33,892	1,686	3,955	–	1,843	37,690

Depreciation							Net book value	
1.1.1996	Translation difference	Charge for year	Reclassifications	Disposals	31.12.1996		31.12.1996	31.12.1995
DM million	DM million	DM million	DM million	DM million	DM million		DM million	DM million
677	**11**	**221**	**1**	**37**	**873**		**464**	**358**
2,557	104	257	10	24	2,904		5,041	4,666
16,519	728	2,118	– 12	1,407	17,946		5,159	4,738
2,216	129	406	1	237	2,515		685	555
–	–	–	–	–	–		1,491	1,134
21,292	**961**	**2,781**	**– 1**	**1,668**	**23,365**		**12,376**	**11,093**
2	–	5	–	–	7		51	38
–	–	–	–	–	–		5	5
–	–	–	–	–	–		349	261
6	–	–	–	–	6		4	4
–	–	–	–	–	–		19	11
10	–	–	–	–	10		161	135
18	**–**	**5**	**–**	**–**	**23**		**589**	**454**
21,987	**972**	**3,007**	**–**	**1,705**	**24,261**		**13,429**	11,905

Consolidated companies (1)

The consolidated companies comprise BMW AG and, in principle, all subsidiaries in the Federal Republic of Germany and abroad. A total of 18 (1995: 17) subsidiaries in Germany and 123 (1995: 123) foreign subsidiaries have been consolidated.

Sixty-eight (1995: 66) dormant or minor companies are not included in the consolidated financial statements, since they are not material to the Group's financial and earnings position. As in the previous year, five subsidiaries are not included in accordance with Section 296 Para. 1 No. 2 of the German Commercial Code (HGB). They are accounted for using the equity method.

In addition, the BMW Pensionskasse (Österreich) AG, Steyr, has not been consolidated because its assets are assigned for a specific purpose.

The non-inclusion of subsidiaries has an impact on Group sales of about 1%.

Three associated companies are accounted for using the equity method. Eleven (1995: 12) associated companies are not included in the consolidated financial statements because of their relative insignificance to the Group's financial and earnings position. These associated companies are stated at cost, less write-downs where applicable, under investment in other companies.

A complete list of the Group's shareholdings is filed with the Commercial Register of the Munich Local Court (HRB 42243). The principal subsidiaries are listed on page 136.

Changes in consolidated group (2)

BMW Leasing GmbH and Co. OHG, Dingolfing, BMW Motoren GmbH, Steyr, BMW Korea Co., Ltd., Seoul, and BMW New Zealand Ltd., Auckland, have been included in the consolidated financial statements for the first time. ARG Holdings Ltd., Birmingham, and Pressed Steel Fisher Ltd., Birmingham, have left the consolidated group. BMW (Schweiz) AG, Dielsdorf, has merged with BMW Holding AG, Dielsdorf, to form BMW (Schweiz) AG, Dielsdorf.

The effect on the Group's financial and earnings position is not material.

Principles of consolidation (3)

The investment in subsidiaries is consolidated using the net book value method. Under this method, the cost of investment is set off against the Group's share of equity of the consolidated subsidiaries at the time of acquisition or initial consolidation. Any resulting excess of purchase consideration over the net assets acquired is set off against revenue reserves.

The same principles are applied in consolidating associated companies under the equity method.

Receivables, liabilities, provisions, income and intercompany profits are eliminated.

Foreign currency translation (4)

In the individual financial statements of BMW AG and its subsidiaries, receivables and liabilities are translated at the rate applicable on the transaction date. Provisions are made for unrealised exchange rate losses at the balance sheet date. Where foreign currency receivables and liabilities of non-German subsidiaries have been hedged by forward exchange contracts, they are valued at the appropriate hedging rate.

In the consolidated financial statements, fixed assets are translated at the closing rates of exchange like other assets and liabilities stated in foreign currency. Income and expenses are translated at the average rate of exchange rate for the year. Exchange differences resulting from the translation of shareholders' equity are offset directly through revenue reserves.

Accounting policies and presentation (5)

To improve clarity of presentation, individual items in the consolidated balance sheet and in the consolidated income statement have been combined. These items are shown separately in the Notes to the consolidated financial statements. Separate items have been added to the consolidated financial statements to show the effects of sales financing.

The individual financial statements have been prepared using uniform accounting policies. In order to ensure uniformity of valuation within the Group, the tax-allowable depreciation and special reserves which are included in the individual financial statements of the consolidated subsidiaries based solely on tax laws and regulations, are not included in the consolidated financial statements. Deviations from Group accounting policies by associated companies have not been adjusted if the amounts involved are immaterial.

Purchased intangible assets are carried at cost and written down primarily using the straight-line method.

Tangible assets are valued at acquisition or manufacturing cost less depreciation. Office and factory buildings are depreciated using the straight-line method. Other depreciable tangible assets having a useful life of more than three years are depreciated using the declining balance method, switching to the straight-line method as soon as the latter results in higher depreciation.

Expenditure on low-value fixed assets is written off in full in the year in which it is incurred.

Office and factory buildings including utility distribution systems permanently attached to a building are depreciated in 8 to 25 years, residential buildings in up to 50 years, technical plant and machinery in up to 10 years, and other plant, factory and office equipment, in general, in 5 years. For machinery used in multiple-shift operations, depreciation rates are increased to take account of the additional utilisation.

The investment in non-consolidated subsidiaries and associated and other companies is valued at the lower of cost or current value. Long-term loans are stated at their discounted net present value.

Inventories of raw materials, supplies and goods for resale are stated at the lower of cost or market value. Work in progress and finished goods are valued at their direct material and production cost. Inventories resulting from goods supplied by consolidated companies include an appropriate portion of performance-related production overheads. Write-downs are made to cover risks arising for slow moving items or for technical obsolescence.

Own products which are included as assets of the group's leasing companies are recorded at manufacturing cost as permitted for financial reporting purposes. All other leased products are valued at cost. If the net realisable value is lower, then this value is used.

All risks identifiable on receivables and other assets are covered by appropriate write-downs. Receivables with current maturities of more than one year which bear nominal or no interest have been discounted.

Marketable securities and notes are stated at cost or market value at the balance sheet date, whichever is the lower.

Pension provisions are set up in accordance with actuarial principles, using a rate of interest of 5%. Other provisions and accruals are made to take account of all identifiable risks. Provisions are also made for deferred expenditure.

Deferred taxation is calculated on timing differences arising on the different treatment of transactions for financial and tax reporting purposes. Deferred tax assets and liabilities calculated on such timing differences are netted. A net deferred tax asset balance arising from deferred taxation in the individual financial statements is not recorded. Deferred taxes arising from consolidation adjüstments are shown in accordance with the legal requirements.

Intangible assets (6)

Intangible assets include grants for tool costs, licences, entry fees and software.

Financial assets (7)

The additions to shares in subsidiaries relate primarily to a capital increase at BMW do Brasil Ltda., São Paulo, and the formation of BMW Finance Ibérica, E.F.C., S.A., Madrid.

The disposals of shares in subsidiaries relate to the initial consolidation of BMW Korea Co., Ltd., Seoul, and BMW New Zealand Ltd., Auckland.

The investment in associated companies includes the subgroup of Bavaria Wirtschaftsagentur GmbH, Munich, EL-MOS Elektronik in MOS-Technologie GmbH, Dortmund, Rover Finance Holdings Ltd., Redhill, and UGC Limited, Oxford.

Inventories (8)

	31.12.1996 DM million	31.12.1995 DM million
Materials and supplies	642	573
Work in progress	927	801
Finished goods and goods for resale	4,270	4,195
Advance payments	50	35
	5,889	5,604
Advance payments received	549	421
	5,340	**5,183**

Assets from sales financing (9)

	31.12.1996 DM million	31.12.1995 DM million
Leased products	8,921	7,782
Receivables from sales financing		
Customer loan receivables	7,684	7,104
– of which: with a maturity of more than one year: DM2,994 million (1995: DM2,659 million) –		
Other receivables	193	122
– of which: with a maturity of more than one year: DM29 million (1995: DM16 million) –		
	7,877	7,226
	16,798	**15,008**

Leased products include additions totalling DM7,183 million (1995: DM5,964 million) and depreciation totalling DM3,937 million (1995: DM3,371 million). The disposals amount to DM2,387 million (1995: DM1,299 million). Foreign currency gains on the translation of foreign currency accounts amount to DM316 million (1995: losses of DM197 million).

Receivables and miscellaneous assets (10)

	31.12.1996 DM million	31.12.1995 DM million
Trade receivables	3,245	2,573
– of which: with a maturity of more than one year: DM38 million (1995: DM31 million) –		
Other receivables and miscellaneous assets		
Receivables from subsidiaries	659	475
– of which: with a maturity of more than one year: DM125 million (1995: DM53 million) –		
Receivables from associated and other companies in which an investment is held	50	22
– of which: with a maturity of more than one year: DM21 million (1995: DM22 million) –		
Miscellaneous assets	1,103	756
– of which: with a maturity of more than one year: DM191 million (1995: DM162 million) –		
	1,812	1,253
	5,057	**3,826**

Receivables from subsidiaries relate predominantly to financial receivables. Miscellaneous assets include primarily tax refund claims, deferred interest receivable, loans and shareholder rights.

Marketable securities and notes (11)

	31.12.1996 DM million	31.12.1995 DM million
Other securities	1,317	1,450
Notes	18	24
	1,335	**1,474**

Other securities include primarily fixed-interest securities and shares in investment funds.

Liquid funds (12)

Liquid assets relate to cash in hand, deposits at the Bundesbank and cash at banks.

Prepaid expenses and deferred taxes (13)

	31.12.1996 DM million	31.12.1995 DM million
Prepaid expenses	162	158
Deferred taxes	523	413
	685	**571**

Subscribed capital and capital reserve (14)

The subscribed capital of BMW AG amounts to DM989 million and is divided into 10,599,110 ordinary shares with a nominal value of DM50 each, 225,000 ordinary shares with a nominal value of DM100 each, 368,000 ordinary shares with a nominal value of DM1,000 and 1,365,790 non-voting preference shares with a nominal value of DM50 each. The preference shares participate and bear an extra dividend of DM1 per share. All shares are bearer shares.

The subscribed capital increased by DM1.9 million through the issuance of 37,900 non-voting preference shares. A subscription right in the case of a rights issue is excluded for these shares. As a result, the remaining authorised capital of BMW AG, which permits non-voting preference shares with a nominal value of DM15 million to be issued up to May 1st 1999, amounted to DM9.7 million at the balance sheet date. The premium of DM21 million from this capital increase was transferred to capital reserve.

Revenue reserves (15)

Revenue reserves consist of legal reserves of DM2 million, the other revenue reserves of BMW AG, and the reserves set up from the net results of consolidated companies.

Minority interest (16)

Minority interest represents the share of third parties in the equity of consolidated subsidiaries.

It includes primarily minority shareholders' interests in BMW Rolls-Royce GmbH, Oberursel.

Shareholders' equity (17)

DM million

Movements in shareholders' equity:

Balance at December 31st 1995		8,200
Dividend of BMW AG for 1995	–	267
Increase in subscribed capital from remaining authorised capital	+	2
Transfer to capital reserve from capital increase for preference shares	+	21
Movements in revenue reserves		
– Transfer from net income	+	516
– Set-off of differences resulting from capital consolidation	+	16
– Currency translation adjustment	+	284
	+	816
Unappropriated profit available for distribution	+	297
Change in minority interest	–	2
– of which from net income: DM7 million –		
Balance at December 31st 1996		**9,067**

The set-off of differences resulting from capital consolidation relate primarily to the initial consolidation of BMW New Zealand Ltd., Auckland, and BMW Korea Co., Ltd., Seoul.

The currency translation adjustment includes the currency difference resulting from the translation of shareholders' equity.

Provisions and accruals (18)

	31.12.1996 DM million	31.12.1995 DM million
Pension provisions	2,279	2,009
Other provisions and accruals for		
Taxes	727	463
Personnel expenses	947	864
Ongoing operations	5,479	5,048
Miscellaneous	1,440	1,224
	8,593	7,599
	10,872	**9,608**

The pension provisions relate mainly to commitments to pay old-age pensions to employees of BMW AG. The pension commitments are fully covered by provisions.

This also applies if the pension commitments are stated with an interest rate of 7% in compliance with international accounting standards.

Other provisions and accruals cover all recognisable specific risks and group commitments for which the amounts involved are uncertain.

In addition, this heading includes accruals for outstanding invoices from dealers and suppliers, anticipated losses on contracts and risks arising from litigation and guarantees. Provisions have also been set up for maintenance expenditure required in the financial year but deferred until the following year. Additional provisions have been created for anticipated major repairs.

Liabilities (19)

	31.12.1996			31.12.1995
		of which: with a maturity of		
		up to 1 year	over 5 years	
	DM million	DM million	DM million	DM million
Bonds	1,633	314	723	2,791
Liabilities to banks	1,745	904	776	1,404
Trade payables	3,014	3,014	–	2,513
Other liabilities				
Liabilities on bills accepted and drawn	206	206	–	68
Liabilities to subsidiaries	145	143	–	135
Liabilities to companies in which an investment is held	32	32	–	34
Liabilities to BMW employee welfare fund	68	–	68	66
Miscellaneous liabilities	3,421	2,258	209	2,478
– of which: for taxes	(515)	(515)	–	(462)
– of which: for social security	(176)	(176)	–	(162)
	3,872	2,639	277	2,781
	10,264	**6,871**	**1,776**	**9,489**

Liabilities due in one year to five years total DM1,617 million.

When viewed together with the bonds disclosed under liabilities from sales financing, bonds amount to DM6,037 million (1995: DM5,218 million).

Liabilities from sales financing (20)

	31.12.1996	of which: with a maturity of up to 1 year	of which: with a maturity of over 5 years	31.12.1995
	DM million	DM million	DM million	DM million
Liabilities from sales financing				
Bonds	4,404	817	1,087	2,427
Liabilities to banks	5,571	3,505	416	5,616
– of which: secured by real estate liens	(62)			(97)
Trade payables	686	668	–	352
Commercial paper	1,623	1,623	–	2,295
Other liabilities	693	349	245	578
	12,977	6,962	1,748	11,268
Deferred income lease financing	1,894			2,031
	14,871	**6,962**	**1,748**	13,299

The liabilities from sales financing serve to refinance leased products and receivables from financing.

Liabilities due in one to five years total DM4,267 million.

Deferred income from lease financing relates to amounts received on lease contracts not yet due.

Contingent liabilities

	31.12.1996 DM million	31.12.1995 DM million
Guarantees	131	509
Discounted bills of exchange	38	–

DM11 million thereof relate to contingent liabilities to subsidiaries (1995: DM8 million).

Joint and several liability also exists in the case of investments in general partnerships.

Other financial obligations

According to current maturities, the net present value of future payment obligations under rental and leasing agreements amounting to DM1,453 millions is as follows:

	31.12.1996 DM million
1997	277
1998–2001	624
after 2001	552

DM93 million thereof relate to obligations to subsidiaries.

Purchasing commitments for capital investment projects amount to DM3,067 million.

Further financial obligations amount to DM5 million.

BMW AG

Net sales (21)

	1996 DM million	1995 DM million
Automobiles	37,966	33,547
Motorcycles	744	731
Leasing	6,054	5,044
Other sales	7,501	6,822
	52,265	**46,144**
Federal Republic of Germany	14,621	13,862
United Kingdom	8,930	8,242
Rest of Europe	12,218	10,088
North America	8,228	6,177
Asia	5,574	5,291
Other markets	2,694	2,484
	52,265	**46,144**

Other sales relate principally to the sale of spare parts and accessories.

Increase in product inventories and own work capitalised (22)

	1996 DM million	1995 DM million
Increase in product inventories	585	1,092
Own work capitalised	111	97
	696	**1,189**

Besides changes in work in progress and finished goods, the increase in product inventories includes changes in leased products.

Other operating income (23)

Other operating income comprises primarily income from the release of provisions and accruals, foreign exchange gains, grants and incentives and releases of write-downs on receivables.

BMW AG

Material costs (24)

	1996 DM million	1995 DM million
Cost of raw materials, supplies and merchandise	30,214	26,828
Cost of purchased services	843	569
	31,057	**27,397**

The cost of raw materials, supplies and merchandise increased because of significantly increased production.

Personnel costs (25)

	1996 DM million	1995 DM million
Wages and salaries	8,202	7,512
Social security, pension and welfare costs – of which for pension plans: DM472 million (1995: DM260 million) –	1,642	1,334
	9,844	**8,846**

Average number of employees per year:	1996	1995
Wage earners	71,247	70,569
Salaried employees	37,881	36,375
	109,128	**106,944**

Depreciation on intangible and tangible fixed assets (26)

Depreciation on intangible and tangible fixed assets related to scheduled depreciation based on financial reporting principles.

Other operating expenses (27)

Other operating expenses include, in particular, administration and distribution costs, warranty, advertising, freight out, maintenance and repairs, rentals and leases, commissions, insurance premiums, foreign exchange losses and valuation allowances on receivables.

Net income from investments (28)

	1996 DM million	1995 DM million
Income from investments	2	47
– of which: from subsidiaries: DM1 million (1995: DM24 million) –		
Income from profit transfers	–	6
Income from associated companies	73	40
Expenses from loss transfers	1	–
Depreciation on investments in subsidiaries	5	2
	69	**91**

Income from associated companies includes the Group's share of the results of the subgroup Bavaria Wirtschaftsagentur GmbH, Munich, of EL-MOS Elektronik in MOS-Technologie GmbH, Dortmund, of Rover Finance Holdings Ltd., Redhill, and of UGC Limited, Oxford.

Net interest income (29)

	1996 DM million	1995 DM million
Income from other securities and long-term loans	6	5
Other interest and similar income	1,470	1,318
– of which: from subsidiaries: DM35 million (1995: DM17 million) –		
Interest and similar expenses	1,270	1,099
– of which: to subsidiaries: DM5 million (1995: DM5 million) –		
Write-downs on long-term loans, marketable securities and notes	2	4
	204	**220**

Interest and similar expenses, together with the interest expense from lease financing, amounted to DM1,771 million (1995: DM1,626 million).

Interest expense from lease financing (30)

The interest expense from the financing of business in leased products is offset by corresponding gains which are contained in the leasing instalments and shown in net sales.

Taxes on income (31)

Taxes on income include German corporation and municipal trade income taxes as well as comparable foreign taxes relating to income. Such taxes are determined in accordance with the tax laws applicable to the individual companies. In addition, taxes on income include the deferred taxes resulting from timing differences derived from consolidation entries.

Net income (32)

	1996 DM million	1995 DM million
Net income	**820**	692
Appropriations of net income:		
Minority interest in net income of subsidiaries	7	5
Transfer to revenue reserves	516	420
	523	425
Unappropriated profit available for distribution	**297**	**267**

Total remuneration of the Supervisory Board and the Board of Management

Subject to the approval of the proposed dividend at the Annual General Meeting, the remuneration of members of the Board of Management for the 1996 financial year amounts to DM13.8 million (1995: DM11.3 million) and that of former members and their surviving dependents to DM2.6 million (1995: DM2.4 million).

Total remuneration of the Supervisory Board for 1996 amounts to DM1.8 million (1995: DM1.6 million).

The pension commitments to former members of the Board of Management and their surviving dependents are fully covered by an accrual of DM22.7 million (1995: DM21.0 million).

The members of the Supervisory Board and of the Board of Management are listed on pages 7 and 8.

Munich, March 1997

Bayerische Motoren Werke
Aktiengesellschaft

The Board of Management

Auditors' certificate

The Consolidated Financial Statements, which we have audited in accordance with professional standards, comply with the German legal provisions. The Consolidated Financial Statements present, in compliance with required accounting principles, a true and fair view of the Group's assets, liabilities, financial position and net income. The Group's Economic Review is consistent with the Consolidated Financial Statements.

Munich, March 5th 1997

KPMG Deutsche Treuhand-Gesellschaft
Aktiengesellschaft
Wirtschaftsprüfungsgesellschaft

Dr. Hoyos — Wirtschaftsprüfer
Kilgert — Wirtschaftsprüfer
(independent auditors)

BMW AG

Balance Sheet and Income Statement of BMW AG

The Financial Statements of BMW AG, of which the Balance Sheet and the Income Statement are presented here, have been provided with the unrestricted confirmatory audit certificate of KPMG Deutsche Treuhandgesellschaft Aktiengesellschaft Wirtschaftsprüfungsgesellschaft, Munich. They are published in the Federal Gazette and filed with the Commercial Register of the Munich Local Court. These Financial Statements are available from BMW AG, D-80788 Munich.

Balance Sheet of BMW AG
at December 31st 1996
(in millions of DM)

Assets	31.12.1996 DM million	31.12.1995 DM million
Intangible assets	98	109
Tangible assets	4,282	4,073
Financial assets	4,809	4,247
Fixed assets	**9,189**	**8,429**
Inventories	1,918	1,875
Trade receivables	530	534
Receivables from subsidiaries	4,115	2,878
Other receivables and miscellaneous assets	125	141
Marketable securities and notes	517	686
Liquid funds	774	1,209
Current assets	**7,979**	**7,323**
Prepaid expenses	**3**	**4**
	17,171	**15,756**

Shareholders' equity and liabilities	31.12.1996 DM million	31.12.1995 DM million
Subscribed capital	989	987
Capital reserve	1,614	1,593
Revenue reserves	3,696	3,439
Unappropriated profit available for distribution	297	267
Shareholders' equity	**6,596**	**6,286**
Registered profit-sharing certificates	**77**	**79**
Pension provisions	2,154	1,899
Other provisions and accruals	4,423	3,905
Provisions and accruals	**6,577**	**5,804**
Liabilities to banks	63	96
Trade payables	1,198	1,056
Liabilities to subsidiaries	1,236	1,325
Other liabilities	1,424	1,110
Liabilities	**3,921**	**3,587**
	17,171	**15,756**

Income Statement of BMW AG

for the financial year ended December 31st 1996
(in millions of DM)

	1996 DM million	1995 DM million
Net sales	**32,429**	**28,561**
Increase in product inventories and own work capitalised	92	175
Total value of production	**32,521**	**28,736**
Other operating income	1,033	811
Material costs	20,591	17,680
Personnel costs	6,149	5,588
Depreciation on intangible and tangible fixed assets	1,503	1,517
Other operating expenses	4,290	3,859
Net income from investments	– 245	– 234
Net interest income	153	174
Result from ordinary business activities	929	843
Taxes on income	331	236
Other taxes	44	72
Net income	**554**	**535**
Transfer to revenue reserves	257	268
Net income available for distribution	**297**	**267**

Major subsidaries of BMW AG at December 31st 1996	Shareholders' [1] equity DM million	Income [1] DM million	Capital investment in %
Domestic			
BMW Ingenieur-Zentrum GmbH + Co., Munich	548	0	100
BMW Rolls-Royce GmbH, Oberursel [3]	261	0	50.5
BMW Bank GmbH, Munich	245	19	100
BMW Finanz Verwaltungs GmbH, Munich	149	30	100
BMW Maschinenfabrik Spandau GmbH, Berlin	112	4	100
softlab GmbH für Systementwicklung und EDV-Anwendung, Munich	63	1	100
Kontron Elektronik GmbH, Eching [3]	42	0	100
BMW Maschinenfabrik Spandau GmbH + Co. Anlagen und Betriebs oHG, Berlin	39	39	100
BMW Leasing GmbH, Munich [4]	31	0	100
Rover Deutschland GmbH, Neuss [3]	14	0	100
BMW Fahrzeugtechnik GmbH, Eisenach [4]	[2]	0	100
BMW INTEC Beteiligungs GmbH, Munich [4]	[2]	0	100
BMW M GmbH Gesellschaft für individuelle Automobile, Munich [4]	[2]	0	100
Foreign			
BMW Coordination Center N.V., Bornem	668	63	100
BMW (South Africa) (Pty.) Ltd., Pretoria	244	19	100
BMW Finance N.V., The Hague	199	29	100
BMW Overseas Enterprises N.V., Willemstad	97	2	100
BMW Österreich Holding GmbH, Steyr	976	54	100
BMW Motoren AG, Steyr	387	97	100
BMW Austria Gesellschaft m.b.H., Salzburg	107	5	100
BMW Holding B.V., The Hague	1,461	48	100
BMW (US) Holding Corporation, Wilmington, DE [5]	1,014	281	100
BMW France S.A., Bois d'Arcy	295	73	100
BMW Japan Corp., Tokyo	291	27	100
BMW Italia S.p.A., Palazzolo di Sona (Verona)	126	27	100
BMW Australia Ltd., Melbourne, Victoria	124	20	100
BMW Belgium S.A./N.V., Bornem	92	26	100
BMW Canada Inc., Whitby	69	14	100
BMW (Schweiz) AG, Dielsdorf	62	13	100
BMW Nederland B.V., The Hague	46	15	100
BMW Ibérica S.A., Madrid	30	15	100
BMW (UK) Holdings Ltd., Warwick	4,569	– 214	100
Rover Group Ltd., Warwick	3,025	– 199	100
BMW (GB) Ltd., Bracknell	188	31	100
BMW (UK) Capital plc., Bracknell	66	[2]	100
Rover Italia S.p.A., Rome	35	18	100
Rover France S.A., Argenteuil	22	[2]	100
Rover Japan Ltd., Tokyo	19	5	100
Rover España S.A., Madrid	17	9	100
Rover Portugal Veiculos e Pecas Limitada, Lisbon	2	1	100

[1] The values correspond with the individual financial statements, prepared in accordance with the respective country's regulations, and do not show the companies' contribution to the consolidated financial statements. Equity and income of companies outside the Federal Republic of Germany are converted using the exchange rate on the balance sheet date.

[2] Less than DM500,000.

[3] Profit and loss transfer agreement with a subsidiary of BMW AG.

[4] Profit and loss transfer agreement with BMW AG.

[5] Consolidated including BMW's operative US companies.

Agenda of the 77th Annual General Meeting to be held on Thursday May 15th 1997 at 10am in the Philharmonie in the "Gasteig", Rosenheimer Strasse 5, 81667 Munich.

1.
Presentation of the Annual Financial Statements for the year ended December 31st 1996, the Economic Review and the Report of the Supervisory Board, as well as the Consolidated Financial Statements for the year ended December 31st 1996, together with the Economic Review of the BMW Group included in the Economic Review.

2.
Resolution on the appropriation of profit.

The Board of Management and the Supervisory Board propose to the Annual General Meeting that the profit available for distribution for the 1996 financial year, amounting to DM297,382,890, be appropriated as follows:

payment of a dividend of DM15 per ordinary share with a nominal value of DM50 of the nominal share capital with dividend entitlement (DM920,455,500 nominal capital), that is DM276,136,650, and
payment of a dividend of DM16 per preference share with a nominal value of DM50 of the nominal share capital with dividend entitlement (DM66,394,500 preference share capital), that is DM21,246,240.

3.
Resolution on the formal approval of the actions of the members of the Board of Management.

The Board of Management and the Supervisory Board propose that the actions of the Board of Management for the 1996 financial year be approved.

4.
Resolution on the formal approval of the actions of the members of the Supervisory Board.

The Board of Management and the Supervisory Board propose that the actions of the Supervisory Board for the 1996 financial year be approved.

5.
Elections to the Supervisory Board.

The Supervisory Board is composed in accordance with Sections 96 Para 1, 101 Para 1 German Corporation Law and Section 7 Para 1 No. 3 German Co-determination Law. The Annual General Meeting is not obliged to accept those nominated.

The period of office of Johanna Quandt and Hans Graf von der Goltz expires at the end of the Annual General Meeting on May 15th 1997.

The Supervisory Board proposes that the following be elected as members of the Supervisory Board on behalf of the shareholders:
Susanne Klatten, economist (BSc), Munich,
Stefan Quandt, graduate industrial engineer, Bad Homburg v. d. H.,
each for a period of office lasting until the end of the 1999 Annual General Meeting.

6.
Appointment of auditors for the 1997 financial year.

The Supervisory Board proposes the appointment of KPMG Deutsche Treuhand-Gesellschaft Aktiengesellschaft Wirtschaftsprüfungsgesellschaft, Munich, as auditors for the 1997 financial year.

		1992	1993	1994[1]	1995	1996
Sales	DM million	31,241	29,016	42,125	46,144	52,265
Change	%	+ 4.7	– 7.1	+45.2	+ 9.5	+ 13.3
Production – automobiles						
Group	units	598,145	532,960	948,683	1,098,582	1,143,558
BMW	units	598,145	532,960	573,083	595,056	639,433
Rover Group	units	–	–	375,600[2]	503,526	504,125
Sales – automobiles[3]						
Group	units	594,895	535,492	960,433	1,092,497	1,172,374
BMW	units	594,895	535,492	568,733	592,838	638,337
Rover Group	units	–	–	391,700[4]	499,659	534,037
Production – motorcycles[5]	units	35,910	36,990	44,435	52,653	48,950
Sales – motorcycles[3]	units	35,675	35,031	44,203	50,842	49,238
Workforce at end of year		73,562	71,034	109,362	115,763	116,112
Investment	DM million	1,975	2,214	3,543	3,477	3,830
as % of sales	%	6.3	7.6	8.4	7.5	7.3
Depreciation	DM million	1,827	1,836	2,567	2,877	3,002
Cash flow	DM million	2,880	2,567	3,569	3,755	4,092
as % of investment	%	145.8	115.9	100.7	108.0	106.8
Fixed assets	DM million	6,834	7,151	11,748	11,905	13,429
Assets from sales financing	DM million	9,764	11,766	13,300	15,008	16,798
as % of balance sheet total	%	35.5	38.8	34.4	36.7	37.0
Other current assets and prepaid expenses	DM million	10,906	11,378	13,645	13,934	15,115
Subscribed capital	DM million	899	902	985	987	989
Reserves	DM million	5,502	5,787	6,538	6,820	7,657
Capital reserve	DM million	817	834	1,574	1,593	1,614
Revenue reserve	DM million	4,685	4,953	4,964	5,227	6,043
Shareholders' equity	DM million	6,718	7,025	7,922	8,200	9,067
as % of balance sheet total	%	24.4	23.2	20.5	20.1	20.0
as % of fixed assets	%	98.3	98.2	67.4	68.9	67.5
Debt/equity ratio						
Industrial business	%	30.7	30.3	24.8	25.1	25.0
Sales financing	%	13.0	12.0	12.2	11.4	11.5
Long-term borrowings	DM million	6,672	7,956	9,012	10,780	11,764
Long-term capital	DM million	13,390	14,981	16,934	18,980	20,831
as % of fixed assets	%	195.9	209.5	144.1	159.4	155.1
Liabilities from sales financing	DM million	8,497	10,353	11,672	13,299	14,871
Balance sheet total	DM million	27,504	30,295	38,693	40,847	45,342
Total value of production	DM million	32,671	30,932	43,287	47,333	52,961
per employee	DM	472,766	467,244	428,924	442,596	485,311
Material costs	DM million	18,542	17,368	24,696	27,397	31,057
Personnel costs	DM million	6,387	6,245	8,425	8,846	9,844
per employee	DM	92,423	94,334	83,482	82,716	90,206
Results from ordinary business activities	DM million	1,477	832	1,357	1,367	1,660
as % of total value of production	%	4.5	2.7	3.1	2.9	3.1
Taxes	DM million	751	316	660	675	840
Net income	DM million	726	516	697	692	820
Net income of BMW AG available for distribution	DM million	226	226	277	267	297

[1] Incl. Rover Group from March 18th 1994
[2] Whole of 1994: 487,298
[3] Group external sales
[4] Whole of 1994: 466,661
[5] Incl. F 650 assembly at Aprilia S.p.A. from 1993

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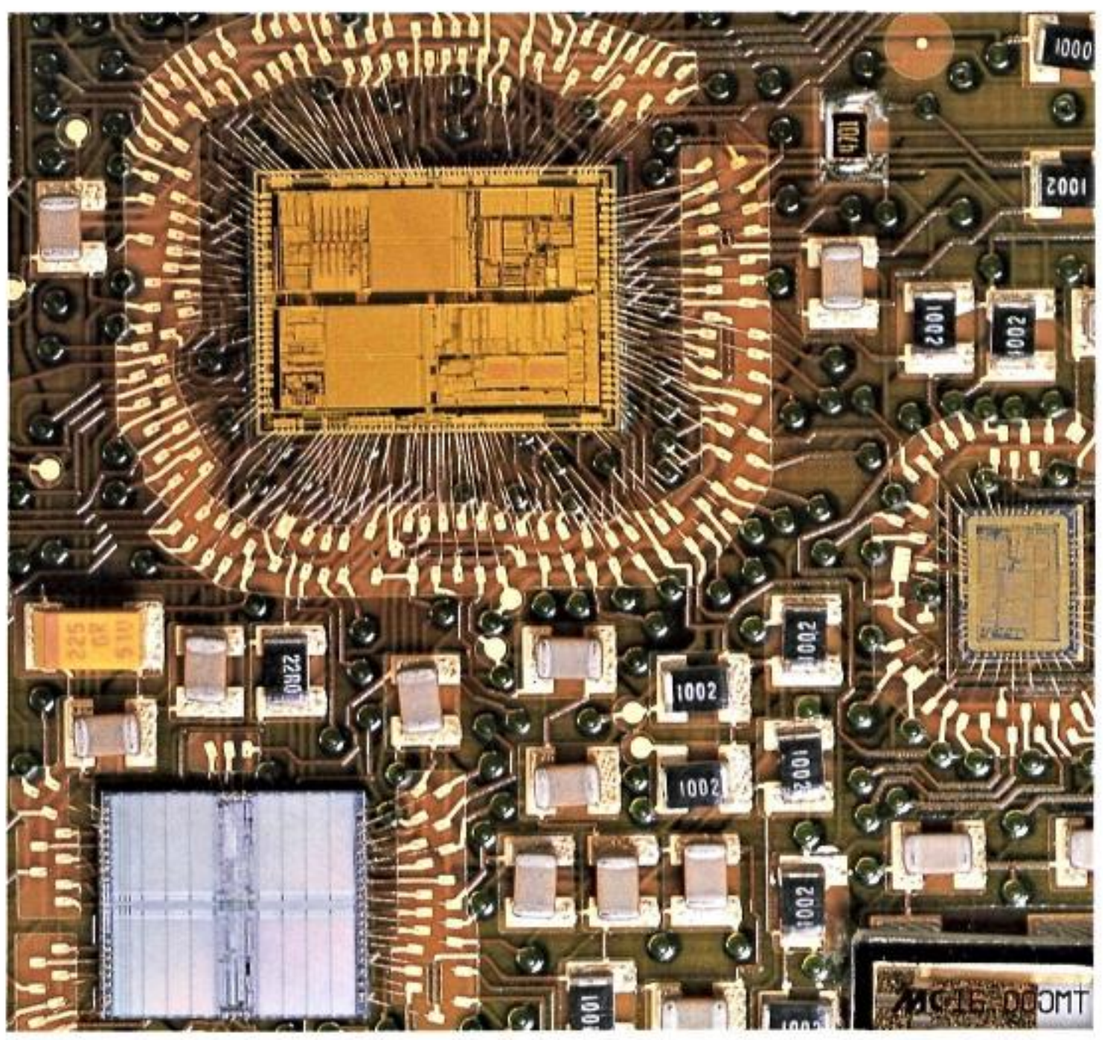
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